

THE AMERICAN NEPTUNE

MARITIME HISTORY & ARTS



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N THE AMERICAN EPTUNE

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COVER ILLUSTRATION

John Webber (1751–1793)

Tongan Canoes, c. 1791

Oil on Canvas

19" x 25"

John Webber served as the official artist for Captain James Cook's third voyage to the Pacific, where he was charged with creating images of important events, discoveries, and landfalls. In the ships *Resolution* and *Discovery*, the expedition visited Tongatapu from 10 June to 10 July 1777, naming the island group "the Friendly Islands." This painting depicts two types of Polynesian craft, the outrigger and the double-hulled sailing canoe.

Webber's images of the voyage brought him renown as an artist of the exotic and election to the Royal Academy the year this work was completed. His paintings produced after the voyage emphasize idyllic views and placid scenery, only rarely portraying locales where conflict occurred, such as Hawai'i.

Peabody Essex Museum Collection
Gift of Stephen Wheatland in memory of Stephen Phillips, 1974

Peabody Essex Museum photograph by Jeffrey Dykes

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Editor-in-Chief's Note

When this journal was founded in 1941, our editors and advisors had some clear-thinking principles as to what they wanted to see in future pages. These are reprinted here as this issue's editorial note. In subsequent issues, comment will be given about continuities and new directions in editorial policy. For the time being, it is splendid to reflect on what a grand project the editors of the journal advanced fifty-six years ago.

BARRY GOUGH
WILFRID LAURIER UNIVERSITY

*From The American Neptune, Volume 1, No. 1
(January, 1941).*

The American Neptune is a quarterly journal devoted to the many aspects of marine research. The field of action will include the Americas, North and South, and the journal, although published in the United States, will include, in so far as possible, studies of the maritime history of Canada and Hispanic America. It will combine many phases of activity and several related, although somewhat divergent, fields of interest. These will include:

1. *Technical Nautical and Marine Historical Research.* Articles dealing with the design, construction, and operation of various types of vessels at different periods.
2. *General Historical Articles.* Articles dealing with the activities of merchants and shipping lines; histories of individual vessels and voyages; studies of ports; naval, privateering, steamship, and yachting history.
3. *History of Scientific Navigation.* Articles dealing with the development of the science of navigation, nautical instruments, charts, and maps.
4. *Sea Lore.* Eye-witness accounts and memoirs dealing with marine activities in various regions; examples of sea lore, chanteys, etc. may be included from time to time.
5. *Biography.* Biographical sketches of shipmasters, merchants, and ship builders will be included where the subjects were of significance in the maritime history of their region. Genealogical accounts and works of local piety will be avoided.
6. *Marine Art.* Articles on marine painting, prints, shipcarving, and the historic decoration of watercraft.
7. *Documents.* Significant unpublished manuscripts, reprints of very rare tracts, and reproductions of contemporary photographs of sailing vessels and early steamships.
8. *Ship Models.* Accounts of collections of historical models. Data including plans for the construction of models. Sets of plans of highest possible historical and technical accuracy will be frequently included. The emphasis in this section will be upon *what* to build rather than *how* to build it.
9. *Marine Museums.* Articles dealing with the collections and activities of various marine museums, and accounts of the marine possessions of institutions primarily devoted to other purposes.
10. *Bibliography.* Reviews, listings, and notes on old and new maritime books. Contributions toward an annual bibliography of significant articles appearing in serial publications.
11. *Notes and Queries.* A section containing notes of general interest, requests for information, and replies whenever possible, will be included in each issue. Subscribers are urged to forward notes and queries.

The conduct of the journal, the editorial policy in general, and the acceptance and rejection of articles submitted for publication rest in the hands of five Editors, assisted by an Editorial Advisory Board, which includes representatives

of regions and institutions and specialists in various fields of maritime history. The Editors and members of the Advisory Board serve without compensation and undertake to divide the work among themselves to the best of their ability. The Editors of *The American Neptune* hope to achieve a balance between accurate technical articles and readable general articles without undue emphasis upon either. They will endeavor to maintain the highest possible standards of accuracy and style, but will endeavor with equal purpose to keep the journal from becoming dull. Each number will contain articles in a number of the fields mentioned, and no number will become clogged with tables of figures. Care will be taken to insure against undue emphasis upon any particular region. While accepting editorial responsibility, the Editors do not necessarily accept or endorse the opinions expressed by the writers. The subject matter will be predominantly American, although articles dealing with the European background of American maritime history and, in certain cases, articles by American scholars upon European subjects will be included. The Editors wish to cooperate with authors and with other journals and will, in so far as possible, refer articles which may not fall within the purview of the *Neptune* to other suitable publications.

The American Neptune is intended to be a common meeting ground for all interested in the many diverse aspects of marine research. One of its principal functions will be the description of material which, although of general interest, may not be widely known. Articles describing the collections of the various museums and institutions may provide the reader with a clue concerning the location of source material. The bibliographic section will be devoted to the same

purposes with emphasis upon current publication. In addition to full reviews of significant new books, shorter notices, and simple title listings of others in each issue, the Editors propose to include from time to time a review of an outstanding old book on a predominantly nautical theme, describing in some detail the value and contents of the work and giving the location of known copies. In connection with these reviews, the Editors hope to be able to furnish information about the possibility and cost of securing microfilm reproductions of books.

It cannot be too strongly emphasized that *The American Neptune* is intended to serve as a means of communications between its readers and that its success will depend upon the measure of literary and historical support which it receives from them. Readers are invited to use the journal freely for the publication of their discoveries, whether cast in the form of articles or of brief notes, and as a medium whereby they may carry on their inquiries. Suggestions, comments, and criticisms from readers will be welcomed and will be given careful consideration.

The American Neptune is a strictly non-commercial undertaking, and no payment is made for contributions. As the Editors give their services, receipts from subscription will be devoted entirely to meeting the cost of printing and distribution. The Carnegie Corporation of New York has, by a generous grant, made possible the publication of the preliminary announcement. That Corporation is not, however, in any way responsible for the future of the journal and is not to be understood as approving, by virtue of its grant, any of the statements made or views expressed herein. Publication of the journal will only be possible if it can be made self-supporting by subscriptions.



The Francis B. Lothrop, Jr. 1995 Award

Winner of the Francis B. Lothrop, Jr. 1995 Award for the best article published in *The American Neptune* Volume 55 (1995) is Paul E. Fontenoy's *An "Experimental" Voyage to China 1785-1787*. Based on fresh research and anchored in the rich literature of American trade to Asia, this lucid and well-illustrated essay explains the problems and successes of American exporters to the China market. In the view of the assessors, this is an article well worthy of the award.

Next year, we hope to be able to grant a parallel award in the field of Maritime Arts and, in addition, one in the field of Maritime Modeling. These awards are offered to encourage authors to explore the varied aspects of maritime history and arts.

Barry M. Gough
Editor-in-Chief

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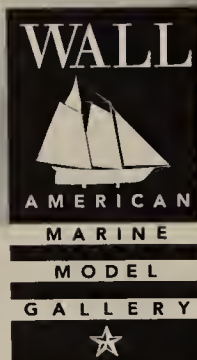
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The Riddle of the *Portland*

Lost in the South Pacific — 1802

SHIRLEY HUGHES

In early June 1802, the American ship *Portland* anchored off the northwestern peninsular district of Hihifo on the main Tongan island of Tongatapu, her master unaware that the Tonga group was in the throes of bloody civil war, nor that the chiefs of one of the principal warring factions resided at Hihifo. The *Portland* had put in for supplies and repairs. At first, relations with the islanders seemed friendly. Produce was made readily available. In exchange, crewmen joined Hihifo raiders in a successful attack on nearby opposition forces. That night in celebration, the Hihifo war chief Teukava of Kolovai, with his retinue and warriors, spent the night feasting aboard ship, while other warriors and crewmen marked the victory ashore.

With the crew effectively divided, the Hihifo chiefs' strategy to seize the ship was in place. The crewmen ashore were murdered and, early the next morning, the master and most of the remaining men were clubbed and speared to death aboard. In the carnage, only a young white woman passenger, Elizabeth Morey, and her black maid Eliza,¹ two non-European crewmen (one a Malay and the other Hawai'ian), and a few young men were spared, the last to help in stripping the ship. Much of the strategy for dividing the crew and sparing the frightened young men for labor was attributed to a villainous beachcomber known only as Doyle,² a man then in service with the Hihifo chiefs. Doyle was placed in charge of plundering the vessel. For several days, arms, tools, sails, and cargo were ferried ashore until, when only a few Tongans were present, the surviving young seamen attacked and killed Doyle and chased the Tongans off the ship.

They quickly set the few sails still remaining on the yards and got the ship away to sea. However, the *Portland* was never seen again.³

The *Portland*'s fate remained unknown for over two years, until the *Union* of New York, most recently out of Sydney and Norfolk Island, called at Tongatapu in September 1804. The Tongans promptly attempted to repeat their successful seizure of the *Portland* by once again dividing the crew. The *Union*'s unsuspecting master, with the supercargo and a boat's crew of six men, went ashore. There, out of sight of the ship, all were massacred.

Elizabeth Morey, the *Portland* survivor who had spent the intervening years in Teukava's household, was then commanded by the chiefs to lure other crewmen ashore. Under guard, she was sent out to the ship to do so. The *Union*'s mate was astonished to be hailed from a canoe by "a European woman who spoke to them in English."⁴ Fully aware of the deaths ashore, although closely watched, Morey was able to signal a warning to the ship. This message was understood, at least sufficiently to arouse suspicion. With her invitation successfully declined, she returned to the beach. The next day, she was again sent by the chiefs, and the *Union* was ready. This time, she cried her warning aloud. She leapt from the canoe and swam for the ship's side under covering fire. Hauled to safety, she hastily informed the mate of the fate of the men ashore, and as the thwarted Tongans attacked in force, the ship's cable was cut and the *Union* escaped to sea.⁵



Tongan vessels common at the time of *Portland's* arrival in 1802. Left, an outrigger canoe. Right, a twin-hulled voyaging canoe (*kalia*) with lateen sail. John Webber, *Boats of the Friendly Island*, (c. 1777), pen and ink drawing. Courtesy Dixson Library, State Library of New South Wales.

The *Union* had sailed from Sydney on a speculative voyage for rumored Fiji sandalwood and called at Tongatapu en route only to recruit a Fiji-speaking islander. With her master lost and the vessel now shorthanded, the mate elected to return to Sydney. The *Union* arrived with her grim news and mysterious female passenger on 25 October 1804.

Reports of the affray and of the taking of the *Portland* appeared in the *Sydney Gazette* of 28 October 1804 in the form of various depositions given by the *Union's* mate and the *Portland's* sole European survivor. The identity of the latter ship, however, soon became obscured. Her name appeared frequently as *Duke of Portland*, the name which was used in colonial records of the day and carried through to many later references. If the rescued woman was aware of the confusion, she made no correction at the time and was destined to remain in Sydney only briefly.

In more recent times, what began as a search for details of the origins, the island life, and subsequent experiences of the South Pacific's first white

woman castaway soon became a wider search for knowledge of the ship that had borne her to her strange adventures, the loss of which only she had escaped to relate. What, then, was the ship's true name, and who had owned her? By what route had she come to Tongatapu? For what purpose was she sailing in the South Seas which, until that time, had served as little more than oceanic highways for explorers? The new settlement at Sydney offered some slim trading prospect by that time, but the *Portland* did not call there; the newly-found seal killing grounds lay far south in the colder ocean, and commercial onslaught on the South Pacific whaling grounds lay some years in the future.

Whatever may have been her true intentions, the *Portland* was certainly among the early American pioneers of South Pacific merchant voyages. The riddle of her identity called for solution.

The seizure of the vessel was documented in readily available sources, the *Sydney Gazette* and *Historical Records of New South Wales* of 1804, and passing references to her appeared in the former for several more years. With few excep-

tions, she was called the *Duke of Portland*; although referred to as an “American ship,” nowhere was there any mention of an American home port. In a more contemporary anthology of shipwrecks,⁶ however, both of her names and a port of origin appeared in a brief entry recording her loss:

...*The American whaler...Portland or Duke of Portland — it is uncertain which is the correct name — belonged to Boston and was a vessel of about 400 tons. Her master was L. Melon.*”

With a “Boston” clue to follow, enquiries were directed to maritime museums and other shipping archival sources in the United States, which led to her identification:

*The Portland was a three-masted, double-decked ship built in Falmouth, Massachusetts in 1796. She was 92' 6" long and 25' 2" in breadth. She had a square stern, no galleries and no figurehead. As to whaling, it does not appear that she ever did any; there are no records showing any returns of oil by any vessel named Portland at that time. In 1800, her master is listed as Ezra Chaffee and her owners as Ebenezer Preble and Benjamin Bussey of Boston. This appears to have been her last register as it states that the Portland sank at Batavia and was sold at auction.*⁷

The *Portland* had been constructed during the American shipbuilding boom of the late eighteenth century, when Americans took advantage of their opportunity to trade as neutrals in war-blockaded European ports, and as they stretched their reach increasingly into the northern Pacific for furs and to Asian ports for Oriental goods and spices. Before the *Portland* would try for the latter, however, she would have her share of adventure in European waters.

In 1797, the *Portland* sailed from Boston under the command of youthful Captain Nathaniel Silsbee, who owned one-third of her. They were bound for Spanish ports and for Genoa; however, five days out of Cádiz, the *Portland* was captured

by a French privateer and taken to Malaga. Although subjected to “indignities and humiliation,” Silsbee resolutely liberated his ship from confinement and sailed for Genoa. There, the luckless ship was taken once again when a French embargo closed the port. Captain Silsbee learned that Napoleon’s legions bound for Egypt were desperate for salted meat and smuggled forty barrels of beef and pork ashore, hiding them well outside the city. For these, he bartered *Portland*’s freedom and promptly fled the Mediterranean.⁸

It seems unlikely that this early — and perhaps first — voyage of the *Portland* can have yielded much profit for her owners. However, Silsbee’s skillful extrication of his ship from troubles certainly enhanced his reputation as a dashing and resourceful master. Silsbee’s next voyage in January 1800 was undertaken in partnership with Boston merchant Ebenezer Preble, one of the *Portland*’s owners.⁹ Preble’s partner in the *Portland* was another Boston trader, Benjamin Bussey, who had known the *Portland*’s new master, Ezra Chaffee, for several years. Chaffee had earlier commanded ships partly owned by Bussey — including *Three Friends* in 1794 and *Franklin* in 1795.¹⁰ When he took command of the *Portland* in early 1800, Ezra Chaffee, from New Bedford, was about thirty-five years of age.¹¹

The *Portland* sailed from Boston in the northern spring of 1800, bound for Batavia via the Cape of Good Hope, arriving at the Cape on 10 June 1800. Her cargo was listed in Cape records as “various kinds of merchandise,”¹² likely a collection of goods thought suitable for Batavia trade. On 5 July 1800, Captain Israel (Ezra) Chaffee signed the standard Cape Town Obligation,¹³ an undertaking not to transport deserters, slaves, blacks, or passengers from this port under British Occupation except by prior written permission of the Governor. He probably sailed for Batavia later in July, but the sailing date was not recorded. The date of the *Portland*’s arrival at Batavia is also unknown. What is recorded is the death of Ezra Chaffee, age thirty-six, at Batavia on 26 November 1800, perhaps of malaria or dysentery which commonly decimated European crews in that notoriously unhealthy port.¹⁴



Batavia Roadstead, where *Portland* sank in 1801. Section of *Plan of the Road and City of Batavia on the North Coast of Java Island*, by Gerard Van Keulen, with Improvements & Corrections from Capt. H. Smedley. Published London, May 1794. Courtesy National Maritime Museum, Greenwich, London.

Portland's misadventures still had their course to run. Some time between late 1800 and early 1801, she sank in Batavia Roadstead, either as a result of collision in the crowded moorings or flooding by an open seam. Whatever the cause, in due course she was righted, repaired, and prepared for auction, where she was acquired by Captain Lovett Mellen acting on behalf of the American Manila trader John Stuart Kerr.¹⁵ Nothing is known of Mellen's earlier maritime history, but at Manila he appeared to be granted, by Kerr, considerable responsibility and freedom to exercise commercial judgment, which he was to use to the fullest extent.

By 1800, John Stuart Kerr of Philadelphia was well established at Manila, factoring for US merchant vessels and trading on his own account. He was well regarded by his fellow countrymen¹⁶ and was appointed the first US Consul to the Philippines in 1802.¹⁷ His good reputation also became known in Sydney, where he would be described as a "worthy and respectable gentleman."¹⁸

Around the end of April 1801,¹⁹ the brig *Emperador* owned by Kerr, sailed from Manila for Batavia under Mellen's command on what ap-

peared to be a brief, straight-forward voyage. Mellen possessed instructions to dispose of his cargo at Batavia and purchase commodities suitable for the Manila market, with Kerr providing a letter of credit for 20,000 Spanish dollars to facilitate the trade.²⁰ That Kerr entrusted Mellen with both his ship and his considerable credit suggests that they were well acquainted. Whether their understanding quite allowed for the extent to which Mellen was to exceed his sailing orders is unclear.

At Batavia, apparently, Mellen saw the opportunity to purchase a still relatively new American-built ship cheaply. In order to do so, and contrary to his instructions, he sold both his cargo and Kerr's brig. Employing the proceeds and making use of Kerr's credit, Mellen bought the *Portland* at auction, advising Kerr of the transaction by letter and adding that he should "not be expected at Manila before he should actually return."²¹ As to Mellen's motive for the seemingly extravagant exchange of vessels, it seems likely that at "400 tons," the *Portland* was larger than the

brig in which he had arrived at Batavia. If so, such a ship could take him safely to Spanish ports of South America. There, trade was then opening up to neutrals, a development that would certainly have been known and much discussed in maritime circles in Manila, where the galleon trade was in its last decline.

Later evidence suggested a Lima destination for Mellen's final voyage, but before that sailing, he would leave a trail of dubious transactions from port to port, and ultimately leave John Stuart Kerr considerably the poorer for his trust. Meanwhile, Kerr was — unexpectedly — the new owner of *Portland*, and in the latter half of 1801, she sailed from Batavia with Mellen in command.

At Batavia, the *Portland* was chartered by a Dutch company to bring a cargo of rice from "Serra Bay" (Sourabaya?). The cargo was duly taken aboard, but here we find first evidence that Mellen was a man of flexible scruples. Instead of delivering his cargo to Batavia, Mellen sailed for Mauritius, where he sold the rice at Port Louis.²² This so greatly displeased the Dutch they sought to detain Mellen and his ship, but both were then beyond Dutch reach and would remain so.

The *Portland* arrived at Port Louis on 30 November 1801.²³ At that time, the port was a nest of privateers of many flags and a favorite of Americans in the China trade. The *Portland*, however, was bound elsewhere. Before year's end, she boarded passengers, loaded cargo, and sailed for Cape Town, where she arrived in early January 1802. Her passengers from Mauritius included Mr. and Mrs. H. Rosselt and their slaves, and Mr. G. Prager. The latter was apparently short of cash at Port Louis and signed a promissory note to Mellen for 150 dollars "for the remainder of my passage money." When the *Portland* arrived at the Cape, a sharp dispute arose. Prager refused to pay the amount until his goods were unloaded and the ship refused to unload until paid. Thus deadlocked, the matter was referred to the local authorities for settlement.²⁴

Mr. and Mrs. Rosselt received written permission to land, together with their baggage and slaves, by letter dated 11 January 1802 and signed by A. Barnard, secretary to the Cape Governor.²⁵

The ship's agent at the Cape was merchant and US Consul John Elmslie of Pennsylvania, a further American connection of the *Portland*.

From the time of *Portland*'s arrival at Cape-town in early January 1802, Mellen proceeded to leave a paper trail which recorded both the normal activities of a merchantman in port and some rather more unusual events. On 14 January 1802, he applied to the Governor for permission to land his second and third mates who were seeking discharge at the Cape "in order to get passage to India."²⁶ Such adjustments of officers and crew were not uncommon, but whether there had been some disagreement aboard or the mates were simply unwilling to undertake the next, long leg of *Portland*'s intended voyage is not known. The latter seems more likely. On 16 January 1802, Mellen signed the standard Port Obligation, identical to that signed by Chaffee on his outward voyage, and on 27 January 1802 port fees to the sum of 32.6 rix dollars were paid for the ship.²⁷

Meanwhile, another in-port dispute had arisen, this time between Mellen and Captain Hugh Ferrar Venables of the British merchantman *Pegasus*, concerning a *Portland* to *Pegasus* ship-to-ship trade of "Indian goods" for which Mellen had paid neither import nor transshipment dues. Venables was caught with the goods on his manifest and found liable. The goods were seized and a hefty fine of 2,400 rix dollars was imposed on Venables, penalties he protested would ruin him. The outraged Englishman, vowing his innocence and alleging conspiracy between Mellen and the first mate of the *Pegasus*, complained vigorously in a series of letters written to port authorities on 15, 17, 19, and 22 February 1802. In the first of these, written on Friday, 15 February, Venables noted that the *Portland* was "almost ready to proceed on her voyage," and it seems likely she sailed that weekend.²⁸ If Mellen had remained in port, no doubt he would have been required to respond to Venables' protests. Instead, he elected to "answer with his tops'ls."

The circumstances of Mellen's abrupt departure generate both interest and difficulty. No official document recorded his departure; consequently, there was no declaration of his destination.

Cape of Good Hope Jan 4th 1802

His Honor Genl Dundas Sir, my second
and third Mates have made application
for their Discharge at this place in
order to get a Passage to India where
I intend Discharging together with a
servant girl of the latter, as soon as
your Honor will grant permission
for the same, I have agreed to
the Post Instructions reported it to
Capt Campbell who informed me
the Channel in which the Business
would be Regularly Done.

I am your Most obedient
and Humble

Servant

Lovett Mellen

Commander of the
Ship Portland

Letter written by Captain Lovett Mellen at Cape Town in January 1802 seeking the British Governor's permission to discharge *Portland's* second and third mates and a servant girl of the latter at the Cape of Good Hope. Courtesy South African State Archives Service, Cape Archives Depot.

There was, however, other evidence of *Portland*'s possible intentions.

Elizabeth Morey joined the ship at Cape Town. She later stated in her Sydney deposition that they were "bound for Lima," but whether she meant to convey the *Portland*'s next port-of-call or her own intended point of disembarkation was not made clear. Another later account suggested that in Manila, the destination had been believed to be the "north west coast of America," and included the cryptic note that Mellen "had left [the Cape of Good Hope] clandestinely."²⁹ Perhaps both destinations were intended. They were certainly compatible — first Lima trade on the South American Pacific Coast, then north for furs for the Canton market and home to Manila — a near circumnavigation of some daring and considerable potential profit, if successful. As to the *Portland*'s "clandestine" departure, apart from any wish to dodge further involvement with the troublesome Venables, there are other reasons why Mellen may have chosen to slip away. To avoid impressment of his crew for the Royal Navy, which was a serious problem for American ships of the time, or perhaps as a "revolutionary" American, Mellen was disdainful of British authority and simply left when he chose to do so, opting to sail on a weekend when the Cape Town Custom House was closed and official interference with his departure unlikely.

Less obvious reasons may have involved his arrangements with Elizabeth Morey. He boarded his passenger and her maid without official sanction and in defiance of the Obligation he had signed. Or, Morey may have had her own reasons for wishing to make a furtive departure from the Cape, in which Mellen conspired. If such was the case, however, her Sydney deposition — understandably — gave no such indication, and by then she had other secrets to conceal.

Whatever the circumstances may have been, it is clear that *Portland* left the Cape around mid-February 1802. A long and troubled passage lay ahead.

The *Portland*'s next reported landfall was not South America, but lonely Norfolk Island in the southwest Pacific, where she arrived "in distress" toward the end of May 1802,³⁰ more than three

months after leaving the Cape. With destination Lima, *Portland* would have headed for Cape Horn. There, unfavorable weather must have beaten her, and she went about to seek the South American coast from the west, passing below Van Dieman's Land (Tasmania) in the attempt. Thereabouts, damage to the ship, shortage of supplies, loss of men, or sickness in the crew forced another change of course, and the *Portland* turned north, prematurely, into the Pacific.

The three-month passage from Cape Town was sufficient for *Portland* to have tried for Cape Horn and then reversed her course. By comparison, in 1776–1777, James Cook made Cape Town to Van Dieman's Land in under two months, a voyage which included first locating and then six days spent charting Kerguelen Island well down the Southern Ocean.

The southern latitudes where *Portland* sailed were — and are — filled with danger: numbing cold and violent storms, towering seas and howling winds. Some or all of these would have been met. Small wonder, then, the *Portland* was distressed when she made her unpremeditated call at Norfolk Island.

What cannot be explained is why she did not make for Sydney harbor, where far better repair and supply facilities existed than off the exposed and inhospitable shore of Norfolk Island's dismal penal outpost. Perhaps Mellen was concerned that news of his affairs had preceded him from Cape Town or Batavia, or damage to *Portland* was such that he feared his ship's condemnation in the port. Perhaps his navigation had failed and he was lost. Whatever the reason, Norfolk Island was the landfall, for better or worse, and events would prove it to be the latter.

Relationships between *Portland* and the prison commandant, Major Joseph Foveaux, were less than cordial. Supplies were very scarce and only grudgingly provided, and confrontation soon occurred. Foveaux would report to the Governor of New South Wales that during *Portland*'s visit, her crew "roughly forced people out of the boats and took convicts away from the island,"³¹ but by the time Foveaux' report arrived in Sydney, the Governor could only comment in frustration that "by then



Sydney Cove from the western shore. Drawing by Edward Dayes, *A View of Sydney Cove, New South Wales*, 1802. Courtesy Mitchell Library, State Library of New South Wales.

the delinquent was beyond my reach.³²

Portland's troubles remained largely unresolved. Toward the end of May 1802, she sailed for Tonga, Cook's so-called "Friendly Islands," likely hopeful of a warmer Polynesian welcome and fresh food and water to be had in good supply. No doubt, the fleeing convicts were profoundly grateful for their newfound freedom, unaware how brief this was to be. They arrived at Tongatapu on or about 1 June 1802. A few days later, all or most were dead. Soon thereafter, the few surviving crewmen in the under-canvassed, undermanned, and damaged *Portland* vanished in the South Pacific.

News of the loss of the *Portland* finally reached the United States from Sydney. Various versions of the depositions published in the *Sydney Gazette* in 1804 appeared in the *Salem Gazette*, the *Boston Gazette*, and the *Columbia Centinel* in October 1805,³³ some adding editorial comment. None, however, carried any information concerning Captain Lovett Mellen, whose early history remains obscure. Mellen's only

legacies, therefore, were the likelihood of far-exceeding sailing orders and sharp dealings with the Dutch and English, well beyond what could be fairly called hard-headed trade. Whether *Portland's* loss resulted from a lack of sound command experience on Mellen's part or from a combination of misfortunes is a moot point. The latter may well have resulted from the former.

Portland was the first ship ever to be seized by South Pacific islanders. In time, her loss became well known to mariners and maritime historians, and she became something of a paradigm for other ships lost unaccountably at sea. Beyond that stark memorial, the voyage has served to illustrate contemporary commercial shipping practice wherein masters were invested with considerable trust. They were relied upon to act both according to instructions and to use their own initiative for profitable trade. While such dual responsibilities were sensible and needed, it would be understandable if sometimes, in the absence of a supercargo, an inexperienced master failed to reach a satisfactory balance between the two demands.

The *Portland's* last owner, John Stuart Kerr of

Manila, survived the commercial setback of his loss and remained a successful trader and US Consul for some years. In the 1790s, he had married Gertrudis Coll, and they had at least two sons and a daughter. In the 1960s, their descendants were reported to be prominent in Philippine commercial affairs and may be so still.³⁴

Although Elizabeth Morey's depositions stated, somewhat guardedly, that following the *Portland* massacre "she was given to the chief's wife" (meaning the or a wife of Teukava), and that "she lived with the chief's wife," there seems little doubt that she herself soon became one of Teukava's wives. According to more recent Tongan accounts, she bore Teukava two sons, Mo'ungatea and Taukei'aho, and was again pregnant at the time of her escape on the *Union*. It can only be speculated that becoming homesick for her children and island friends, wary of prurient speculation likely to be aroused by her new pregnancy, and generally culture shocked by her precipitous entry into Sydney's rough-and-ready white society, she came to regret her impulsive decision to escape from Tongatapu — even though, by her actions, she was certainly credited with having saved the *Union*. On the *Union*, at least, she had grateful friends to whom she could appeal to return her to her Tongan home. Sadly, her journey was not to be completed.³⁵

The *Union* resumed her interrupted voyage for Fiji sandalwood, departing Sydney on 12 November 1804 under the command of mate-now-master Daniel Wright. Some weeks later, in a heavy swell, the *Union* was trapped among the reefs off Fiji and lost with all hands.³⁶ With her died all those who may have learned more of the *Portland* and her loss than was officially reported, and almost certainly Elizabeth Morey herself. The completeness of those deaths perhaps explains, at least in part, why the riddle of the *Portland* has persisted to this day.

The *Union*'s owner, Edmund Fanning of New York, remained unconvinced that her master Captain Isaac Pendleton and his men had died at Tongatapu in 1804. When another of his ships, the *Hope* (Captain Brumley), sailed from Staten Island in 1806, she did so with Fanning's instructions to search for the missing men.³⁷ The *Portland*'s log

recorded that although all possible enquiries concerning the men were made at Tongatapu, "none of the islanders knows of one on the island."³⁸ Like *Portland*'s men before them, they had long since been consigned to the *umu tangata* — the oven for men.

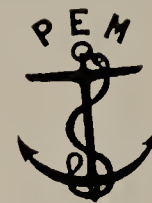
Fanning took a heavier loss than just his ship and men. When Captain Pendleton was "tempted" into his sandalwood venture with Sydney trader, ship's agent, opportunist, and emancipist Simeon Lord, the latter undertook to store some 14,000 seal skins the *Union* had taken on southern Australian shores. When the *Union* was lost, Lord also retrieved a further 60,000 skins from Antipodes Island, where members of the *Union*'s crew had been put ashore to increase their harvest. Lord then proceeded to sell the skins at Canton "at good prices," for which Fanning received "not one farthing."³⁹ Fanning's *Hope*, however, was successful in the sandalwood trade. By 1807, sandalwood had been found and exploited at Fiji, and the *Hope* procured a good cargo for the Canton market where it was exchanged for China goods carried to America — their sale contributing "a very considerable sum to the United States' Treasury."⁴⁰

Of the *Portland*'s surviving non-European complement, all three lived on in the Tonga Islands for several years. Mellen's Malay servant, known only as Charlie, became attached to the Hihifo chiefs and was instrumental in their attempt to take the *Union* in 1804.⁴¹ The second crewman, a Hawai'ian named Tui Tui, joined the retinue of the Tongan chief Finau (an opponent of the Hihifo chiefs) and was an active participant when Finau seized the English privateer *Port au Prince* at Ha'apai in 1806.⁴² This attack added further to the islands' well-earned reputation as a group to be approached with special care.

Eliza, Elizabeth Morey's former maid, was subsequently kidnapped by inter-island Tongan raiders and taken to the Ha'apai group. She was still there in 1810, but by then had gone mad — though harmlessly so, it was said. She was last reported to be living in the care of a kindly female chief of Ha'apai.⁴³

War chief Teukava of Kolovai was ambushed and killed by a Fijian mercenary warrior during a

skirmish on Tongatapu in 1808.⁴⁴ For the brutality of the massacre of *Portland*'s crew, the attempt on the *Union*, persistent reports of other cruelties, and for his relationship with Elizabeth Morey, he came to be known as the "notorious chief" Teukava. This description was applied by later missionaries, wary seamen, and edgy traders, with some justification but little understanding of the impact of early European contact on the islands, or the devastating effects of Tonga's civil war. To the Tongans of his time, Teukava was also notorious but principally as a courageous warrior and charismatic chief. The civil war, which brought him notoriety and cost him his life, would recur intermittently until peace was at last achieved in the Tonga Islands in the mid-nineteenth century.



Shirley Hughes is an Australian writer and part-time historian. A member of the Australian Association of Maritime History and the Australian Society of Authors, she has devoted several years to researching the voyage and loss of the Portland, including field research work in the Kingdom of Tonga. Her book based on the experiences of Elizabeth Morey is now in preparation.

Credits

Sincere thanks are owed to the many museums and historical sources in the United States that helped identify Ezra Chaffee and the Portland, in particular, those mentioned in the notes to this article. Other sources of invaluable assistance and advice have included the Mitchell and Australian Maritime Museum Libraries at Sydney; the South African Library, the South African Maritime Museum, and archivist Daniel Jacobs, all of Cape Town; Dr. Thomas R. McHale of Princeton, who shared his

knowledge of John Stuart Kerr of Manila; members of the royal family of the Kingdom of Tonga, and the Tonga Traditions Committee at Nuku'alofa; and the people of Kolovai, Tongatapu. Warmest appreciation is extended to Dr. Ian Campbell of the History Department of the University of Canterbury, Christchurch, New Zealand, who guided and encouraged the search from early days, and who continues his generous contributions and advice to this day.

Notes

1. *Sydney Gazette* [hereafter SG], 28 October 1804. Whether Elizabeth Morey was a bona fide passenger or had joined the *Portland* as the master's companion remains uncertain.
2. Charles Bateson, *Australian Shipwrecks* (Sydney: A. H. & A. W. Reed, 1972), 1:30. Doyle was a survivor of the American schooner *Argo*, wrecked on Mbukatatanoa Reef (now Argo Reef) off the Lau Group, eastern Fiji in 1800. The *Argo*, owned by Robert Berry of Berry & Company, Macao, was on a voyage from China to Sydney.
3. SG, 28 October 1804, deposition of Elizabeth Morey.
4. SG, 28 October, 1804, depositions of Elizabeth Morey and mate Daniel Wright of the *Union*.
5. SG, 28 October, 1804, deposition of Daniel Wright.
6. Bateson, *Shipwrecks*, 1:33; Edmund Fanning, *Voyages Round the World* (New York: 1833), 323–5.
7. *Boston, Massachusetts Ship Register & Enrollments, 1789–1900*. (Detail provided by Mystic Seaport Museum, Mystic, CT).
8. William A. Fairburn, *Merchant Sail*, 545–546. (Extract provided by the Maine Maritime Museum).
9. *Ibid.*
10. *Ship Registers of Boston & Charlestown, 1789–95*. (Provided by Mystic Seaport Museum.)

11. *Vital Records of Dartmouth, Massachusetts to the Year 1850*, Births, 1:55. (Provided by the Old Dartmouth Historical Society, New Bedford, MA). [Hereafter cited as *VRD*.]
12. *Cape Town Port Arrivals*. (Detail provided by the South Africa Library, Cape Town).
13. Cape Records, *BO (British Occupation Group)*, 212:35.
14. *VRD*, Deaths, 3:23. Ezra Chaffee's death was recorded on the New Bedford headstone of his infant son John, who died in 1802. The inscription stated that Ezra "Died in Batavia in the East India."
15. *SG*, 28 October 1804, "Interesting Particulars Relative to Captain Mellon of the Ship Portland (Communicated by a Gentleman)."
16. Thomas R. McHale and Mary C. McHale, eds., *Early American-Philippine Trade: The Journal of Nathaniel Bowditch in Manila, 1796* (New Haven, CT: Yale University, Monograph Series No. 2, 1962), 54–55.
17. Rhoda Hackler, "The US in the Philippines," *Bulletin of the American Historical Collection*, 1989, from extract provided by Lewis E. Gleek, Jr., editor and curator, Manila.
18. *SG*, "Interesting Particulars."
19. *Ibid.* "Interesting Particulars" gives the sailing date of Kerr's ship as "about the end of April 1800." Apparently, the year was misreported or misprinted and should have read 1801.
20. *Ibid.* At the time, the Spanish dollar was the prevailing currency of trade in southeast Asia and at New South Wales. At Sydney, where specie was in very short supply, the exchange rate fluctuated around five shillings sterling. By the early 1820s, the use of Spanish dollars was so widespread a *SG* correspondent proposed that Spanish dollars be adopted as the colony's official currency. This provoked heated responses from British loyalists, to whom only sterling was acceptable. Charges of disloyalty to the crown, un-British attitudes, even outright treachery flew thick and fast subsiding only when the correspondents threatened to sue each other, which brought publication of their letters to an abrupt halt.
21. *Ibid.*
22. *Ibid.*
23. Detail provided by R. Barnes, maritime historian of Vacoas, Mauritius.
24. South African State Archives, NCD 1/150, No. 637, copy of statement by John Wagoner, Notary Public, dated 18 January 1802.
25. *Letters Dispatched Within the Colony*, BO 157, October 1801 – March 1802. The Governor's secretary, A. Barnard, was the husband of Lady Anne Barnard. Her correspondence to the Right Honorable Henry Dundas, published as *South Africa a Century Ago (1797–1801)* (London: Smith Elder, 1901) provides a fine account of life at the Cape of Good Hope during the first British occupation.
26. South African State Archives, BO 126, No. 113, Captain Lovett Mellen's letter to the Governor of the Cape of Good Hope. The letter also revealed the correct spelling of Lovett Mellen's name, which in turn assisted in tracing his probable origins to Hopkinton, Massachusetts.
27. Details provided by the South Africa Maritime Museum.
28. *Ibid.*
29. *SG*, "Interesting Particulars."
30. *Historical Records of Australia*, 1:168, King to Hobart.
31. *Ibid.*
32. *Ibid.*
33. Gerard Ward, ed., *American Activities in the Central Pacific, 1790–1870*, (Ridgewood, NJ: Gregg Press, 1967), 306–307, 311–313. Extracts provided by the Bishop Museum, Hawai'i.
34. *Early American-Philippine Trade*. Detail provided by Thomas R. McHale.
35. John Martin, M.D., *Tonga Islands, William Mariner's Account* (London: 1817), footnote 200. Mariner's story, written some years after his Tonga experiences and quoting a second- or third-hand source, states that Morey remained at Port Jackson (Sydney) after her escape and "later" attempted to return to Tongatapu, when she was lost at sea. No record of Morey's residence in Sydney or elsewhere in New South Wales after 1804 has been found. Rather than attempting the return voyage "later," it seems likely that she sailed again with the *Union* in November 1804 and was lost with the ship at Fiji.
36. Bateson, *Shipwrecks*, 1:38.
37. Fanning, *Voyages*, 240–241.
38. Pacific Manuscripts Bureau, PMB 728, log entries of the *Hope* for late April/May 1807.
39. Fanning, *Voyages*, 234, 239.
40. *Ibid.*, 240.
41. *SG*, 28 October 1804, deposition of Elizabeth Morey.
42. Martin, *Tonga Islands*, 55–58.
43. *Ibid.*, footnote 200.
44. *Ibid.*, 198–199; A. H. Wood, *History and Geography of Tonga* (Auckland: Wilson & Horton, 1945), 38.





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Guarding the New Granadan Coasts: Dilemmas of the Spanish Coast Guard in the Early Bourbon Period

LANCE GRAHN

Like their counterparts in Riohacha and Santa Marta, officials in Cartagena de Indias utilized both land and naval forces to defend their jurisdiction against smugglers' incursions. Soldiers in the several forts around Cartagena kept watch over the city, raided suspected hideouts within the city walls, and patrolled nearby beaches and the western bank of the Magdalena River. And, in the early 1730s, under the leadership of Bartolomé Tienda de Cuervo, infantry troops keyed law enforcement efforts against contrabandists. Yet, the policy — ascendancy of the army over the navy in Cartagena — was short-lived and an exception to the rule of anti-smuggling policy in the Cartagena area. Instead, land and sea forces manned complementary lines of defense against illegal (and not always foreign) commercial incursions, with the latter usually holding the strategic upper hand. Because Cartagena was first a seaport whose political, economic, and military centrality derived from that role, Spanish authorities naturally gave high priority to a naval strategy to combat smuggling, to protect the trade of licit merchants, and to regulate maritime traffic in and out of the port. As a result, contraband control — both terrestrial and maritime — in Cartagena and its hinterlands generally depended first on the naval force of a coast guard.

Traditionally given short historiographical shrift — contraband control seldom appears except as a, or the, cause of the War of Jenkins' Ear — the history of the Cartagena coast guard exemplifies the broader issues of early Bourbon reformism. It

especially highlights monarchical weakness, self-doubt, diffidence, and instability during the problematic reign of Philip V.¹ At the same time, it accents the obstacles to implementing the agenda of reinvigorated Spanish imperialism in the southern Caribbean in the eighteenth century. And, seen through the case study of Lieutenant General Blas de Lezo, it also illustrates the range of American responses to metropolitan mandates.

The contexts, pressures, successes, and failures of the Cartagena-based naval service of Lieutenant General Blas de Lezo typify the difficulties routinely faced by the Cartagena coast guard as well as the challenges of Philippine rule in the early Bourbon period. Importantly, the crown posted Lezo to the southern Caribbean in response to the failure of a rival policy of contraband deterrence, which itself represented a reaction to the perceived inadequacies of a naval defense against smuggling. Insufficiently impressed by the exploits of coast guard commanders in the 1720s; hopeful of reducing government expenditures, particularly in the area of anti-contraband measures; and swayed by the lobbying of Bartolomé Tienda de Cuervo, the former accountant of the Cartagena treasury whose political career had again taken off despite his record of public corruption, metropolitan policy makers decided to make an old option new again. They opted to try to curb smuggling in New Granada with an enhanced infantry presence along the

Caribbean coastline. Tienda de Cuervo's strategy, as approved by the crown, would establish a series of guard outposts strategically placed in the provinces of Cartagena, Santa Marta, and Riohacha. Intensifying the purposefulness of the shift in military emphasis, Philip V ordered the veteran naval officer and commander of the 1730 Tierra Firma galleon fleet, Manuel López Pintado, to ensure colonial compliance with the new directive. The king declared:

Despite the repeated orders which have been given to prohibit the illicit commerce of foreigners along the coasts of Cartagena, each new day finds it more established, the coast guard ships that have been sent there for many years being unable to stop it.... Because Bartolomé Tienda de Cuervo has put in my royal hands a plan in which he expounds the method and form of guards with which the above mentioned prohibited commerce can be stopped and which can make it completely impossible for colonists to board the foreign vessels that continually frequent the wide and open coasts of Santa Marta and Cartagena..., I have resolved to require of you that when you arrive in Cartagena you confer with the aforementioned Bartolomé Tienda de Cuervo, whom you will find in that city, and with other persons whom you consider to be essential for this task, and if you all agree that the cited plan would completely avoid the enunciated harm [caused by contraband trade], you are to put the plan into practice, granting Bartolomé as much authority as he needs.²

This theoretically cost-effective approach to contraband deterrence, however, was soon undermined by opposition from the sitting governor of Cartagena, Antonio de Salas (1731–1737), and by the guards' own connivance at smuggling. Equally damaging to the land-based scheme was royal fickleness, if not outright inconsistency. Philip simply did not give the plan adequate support nor the time to develop and mature. Instead, he and his councillors quickly lost confi-

dence in Tienda de Cuervo and his scheme. In 1733, Philip V relieved him of his command, and the coast guard returned to royal favor.

Still, not until the arrival of the last galleon fleet of the century in 1737 was a formal military coast guard once again a major factor in Cartagena-area coastal patrols. That year the two warships, the *Conquistador* and the *Fuerte*, which escorted the six merchantmen in the convoy, carried orders to remain at Cartagena on coast guard duty.³ Commanded by the experienced officer and soon to be almost mythical hero, Blas de Lezo, these two ships of the line augured potential ill for regional contraband trade, for the commander had already proven to be a tough and effective foe of smugglers. While combating trafficking along the Pacific coasts of Chile and Peru in 1713 and 1714, for example, Lezo's three ships captured six heavily armed smuggling vessels whose total combined value topped three million pesos.⁴ Lezo's task in Cartagena, however, would consume the rest of his life, and, while the English assault on Cartagena would ultimately collapse in 1740, in part because of the leadership Lezo provided the defenders, he would, in the end, fail to stem the flow of contraband through the port, his best efforts notwithstanding.

In a scene reminiscent of the crown's and merchant community's worst fears in 1730, Lezo found Cartagena bay choked, or, in his words, blockaded, by smuggling vessels when his fleet sailed into the harbor on 20 March 1737. Apparently, illicit traders were so unfazed by the approach of two royal warships and so sure of their unfettered ability to conduct business that they made no effort to quit the port before the fleet arrived. Appalled by the extent and brazenness of the smuggling he surveyed, Lezo described the commercial situation in Cartagena as one totally out of control.⁵ He also believed that it was beyond his capacity to contain, for a week after his arrival he sent an urgent request for reinforcements to the royal court.⁶

Undoubtedly, the plea for additional ships and men was a politic move designed to emphasize the enormity of the task facing Blas de Lezo in the spring of 1737. But the commander added both

punch and substantiation to his warning with the extraordinary claim that New Granadan merchants, miners, and military personnel illegally exported about 75 percent of the colony's annual gold production, or about 1,250,000 silver pesos.⁷ On one hand, it might be easy to dismiss this estimate as the self-serving hyperbole of public relations, especially since Lezo had only been on the scene for seven full days when he made this assessment. On the other hand, however, Lezo's experience and acuity cannot be so easily dismissed. Moreover, William Sharp's study of New Granadan gold production somewhat corroborates Lezo's claim with its suggestion that the gold miners of the Chocó smuggled about fifty percent of their eighteenth-century production out of the colony.⁸

Lezo's request for reinforcements was also just as much a plea for necessary replacements. The *Conquistador* and the *Fuerte* had taken such a beating on the Atlantic passage that neither remained truly seaworthy upon her arrival in Cartagena. The *Conquistador* required constant pumping just to stay afloat, and the *Fuerte* lacked a foremast.⁹ With his ships in obvious need of repairs, there was little that he could do to provide naval cover for legitimate commerce along the coasts of New Granada.

Illustrating another problematical aspect of securing logistical support, Lezo requested local assistance at the same time that he sought out metropolitan aid. This was not only within the purview of his royal mandate — Lezo had permission to arm additional vessels in Cartagena, but at local expense — the provincial court at Cartagena also offered a faster and more direct bureaucratic avenue whereby to fill his military needs.¹⁰ Surely to his dismay, Cartagena officials refused his request for funds to outfit one or two ships; they claimed the provincial treasury was empty.

Not skipping a political beat, Lezo immediately turned to the merchant community in the port for financial help. But it too turned him down, professing that it could not even afford to pay the daily living allowance of four soldiers — a total of about a peso per day — of the Cartagena garrison.¹¹ In truth, the merchants refused Lezo's request because just a few days earlier many of them had invested

in the *Compañía de Armadores*, a newly formed, privately financed privateering company which was the brainchild of the governor of Cartagena, Pedro José Fidalgo (1737–1739). To the merchants, then, formal naval patrols now actually represented unwelcome competition and more a threat to their profits rather than a desirable and protective complement to their business.

Fidalgo promoted this joint stock company very early in his tenure as governor. The governor, who held the title “Commandant General of Cartagena, Santa Marta, and Maracaibo to Prevent Illicit Commerce,” believed that the use of coastal patrols along the Caribbean shores of New Granada would go beyond simply capturing contrabandists. In line with traditional imperial thinking, Fidalgo argued that an active coast guard presence would restore the economic vitality, defensive posture, and former glory of Cartagena.¹² Clearly, a naval restraint on contraband trafficking had returned to the political center stage. But, whether Fidalgo distrusted Lezo personally or the navy in general or whether he sincerely believed a private coast guard company to be in his and the merchants' best interests, he firmly held that anti-smuggling cruises in his jurisdiction should be controlled by local elites, not an imperial military command.¹³

Fidalgo initially offered a portfolio of forty-eight shares at 500 pesos each, underwriting the company with 24,000 pesos. The stockholders then met, elected a board of directors, and voted to use the investment capital to outfit two or three sloops for coast guard service. The new company's supplies, however, were to come directly from Spain and, I suspect, be subsidized by the crown. Fidalgo requested royal authorization for an annual register ship from Cádiz to provision the sloops with wine, flour, oil, iron, naval stores, arms, and munitions.¹⁴ The governor's and stockholders' willingness to extend their financial risk and ability to furnish fully their creation were limited.

Lezo seconded Fidalgo's petition, despite the potential difficulties it posed for him. In reality, the Lieutenant General had little alternative but to support his private competitors. He commanded two damaged ships; he had no operating funds; and



Mapa de las Islas de la América y de otros países de Tierra [sic] Firme, n.d. Courtesy Archivo General de Indias, Mapas y Planos, México, 215.

he faced the dim prospect of no immediate access to public monies. In addition, his command had already been humbled by defeat in its first engagement of Cartagena smugglers. Shortly after Lezo heard that the Cartagena merchants had rejected his appeal for financial support in March 1737, he ordered several boats manned by sailors from the *Conquistador* and the *Fuerte* to attack three Dutch sloops in Cartagena Bay. The six launches and one schooner were no match for the larger Dutch ships, and Lezo's forces soon withdrew from the fight.¹⁵

Philip V's government warmly received Fidalgo's proposal. Noting "the zeal for royal service manifested" by the company's founders, the crown attorney for New Granadan affairs recommended approval both of the company and the annual register ship to supply it. Cádiz merchants also backed the governor's request for an annual ship. They agreed that the company was a good way to fight smuggling in New Granada and contended that it would benefit both the royal treasury and Spanish-American commerce. Furthermore, according to Cádiz spokesmen, failure to supply the company would force it to seek supplies in foreign colonies, specifically Jamaica. That of course, would be "very prejudicial" to Spanish interests.¹⁶

While still awaiting approval of the register ship, the company initiated its operations in the summer of 1737 when it dispatched agents to Cuba to purchase its first vessel. Not finding what they wanted there, they proceeded to Jamaica where they purchased a fourteen-gun sloop and an eighteen-cannon bark. Intentionally or not, Fidalgo's company had fulfilled metropolitan fears. Undeterred by that imperial irony, however, Company directors proceeded to hire crews of one hundred sailors for each ship and bought enough supplies to last for two months at sea. These purchases and contracts completely expended the company's original 24,000 pesos in operational funds.¹⁷

The outlay initially produced worthwhile results and gave shareholders hope of realizing the anticipated profit on their investment. On the company's first coastal cruise in August and September, its privateers captured a Dutch smuggling vessel worth about 4,500 pesos near the

mouth of the Sinú River. In October and November, they captured two more Dutch prizes, both sloops each worth more than 20,000 pesos.¹⁸

Hereafter, the company's fortunes soured. Between December 1737 and August 1738, the company raised an additional 10,000 pesos to finance two more campaigns, but all its privateers captured was a single worthless English turtler. More strikingly, a Dutch flotilla of five ships, including a man-of-war, routed the company's two ships in April 1738 and sent them scurrying back to the safety of Cartagena harbor. Four months later, the company sloop sank, leaving the privateers with only the one barkentine.¹⁹ Dismayed at the lack of success and unwilling to absorb any more losses, especially since no peninsular aid had yet appeared, the directors of the *Compañía de Armadores* voted on 23 August 1738 to cease operations when the Spanish warships recently posted to Cartagena arrived from Havana. At Fidalgo's behest, the directors agreed to maintain their remaining vessel at sea in the interim, but she never left port because her crew and managers feared that she, too, might suffer the same fate as the sloop. Five days after the awaited warships anchored in Cartagena on 2 February 1739, shareholders terminated their contractual obligations and officially dissolved the company. Although after the fact, Philip V added the final touch with a royal edict in August 1739, abolishing the company.²⁰

On one hand, the company failed in its own right. With only two small ships in its arsenal, it could never have mounted a sufficiently significant show of force by which to counter over the long term the might and tenacity of coastal smugglers. Then, after the sloop went down with no realistic hope of quickly replacing it, the company was destined to collapse. But, on the other hand, the *Compañía de Armadores* was never free from government interference; that is, Blas de Lezo never surrendered to his private counterpart.

Despite the precarious situation of his command in 1737 and his reluctant public support of the company, he continued his own forays against coastal smugglers and even built up his squadron. The defeat in this skirmish failed to daunt Lezo's resolve. In fact, the brazenness of the Dutch pres-

ence in Cartagena probably strengthened his resolve to carry out his royal charge. By the spring of 1738, even as the privateering company operated off the Cartagena coast, albeit ineffectively, Lezo secured two of the eight sloops from the Spanish navy that he had requisitioned. Once again, it seems as though Philip's government could not make up its collective mind regarding Cartagena coast guard policy. Lezo sent his force on coastal patrol from Sabanilla to Tolú, considerably reducing the volume of illicit imports there.²¹ Not inconsequentially, his dampening of contraband traffic in Cartagena Province also diminished his private rival's chances of success. Six months later, Lezo added four more sloops to his command. Two came from Santo Domingo; the other two, acquired locally, had been the early prizes of the now defunct *Compañía de Armadores*. In addition, Lezo received loans totaling 85,000 pesos from individual Cartagena merchants to finance the operations of the new ships.²²

Philip V's government further strengthened Lezo's hand against smugglers in July 1738 when it liberalized its rules on Caribbean naval prizes. The crown declared that any foreign vessel anchored in Spanish American waters or navigating a suspicious route should be apprehended because in either case it was in violation of international treaties which prohibited foreign ships calling at Spain's American ports and coastlines. Significantly, the order exempted British ships carrying legally contracted goods.²³

This loophole left Cartagena open to illegal English merchant shipping and limited Lezo's ability to deter illegal foreign trade through the port. Once contraband successfully avoided his coastal patrols, detection and seizure largely rested with municipal authorities. Lezo responded to this legal restriction on his actions by shifting the focus of his efforts to the coasts of Portobelo. While Lezo's coast guard squadron took no prizes in the new theater, its presence in the summer of 1739 curbed, if only temporarily, smuggling activity there. The members of the Portobelo town council asked the Lieutenant General to "send them comes-tibles because they now find themselves totally without them," a situation "which had not occurred

before [his coast guards] came on the scene since they were regularly supplied by French, English, and Dutch smugglers."²⁴ Portobelo residents did not receive these foodstuffs from Lezo, but their illicit channels of trade were reopened that autumn when Lezo pulled his fleet back to Cartagena in anticipation of an English invasion.²⁵

The formal outbreak of hostilities in November 1739 overwhelmed Lezo's fight against smuggling. With the declaration of war, England invigorated its efforts to disrupt Spain's Atlantic trade and to protect British contraband trafficking in the southern Caribbean. Spain countered with relatively massive infusions of additional naval funding that, in the end, remained nonetheless inadequate. In early 1740, Lezo received 150,000 pesos from the Lima treasury, an amount his benefactors thought should maintain four ships for an entire year. Instead, it lasted just three months. In addition, a subsidy from Mexico that had been ordered by the king failed to arrive in Cartagena, exacerbating his financial woes.²⁶ To make up the shortfall, Lezo turned once again to the Cartagena merchant community. This time, the directors of the guild collected 100,175 pesos from seventy-seven individual merchants on Lezo's behalf. The deputies then transferred to the Lieutenant General the entire amount, save 175 pesos.²⁷

Within six months, the naval squadron at Cartagena had expended all of its operating funds. The continuing need for support and an empty viceregal treasury therefore prompted Viceroy Sebastián de Eslava (1740–1748) to seek even more private funding from the Cartagena merchants. He applied for a loan of 200,000 pesos, but they refused him, typically claiming that they themselves were penniless. A week later, however, the merchant guild's governing board changed its mind. The deputies admitted to Eslava that their stalling reflected their financial uneasiness, not their poverty. Their organization had the money the viceroy sought, but its members, the deputies told him, feared that the government would not repay the loan. Besides, they argued, the government held assets worth more than 830,000 pesos in Panama and Portobelo on which it could draw.²⁸ Implying that the merchants did not like or trust Eslava

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personally, they reversed their decision on the government loan in 1741 by lending Lezo 99,615 pesos collected from eighty-five merchants, but only after he assured them of eventual repayment. That brought the merchants' total contribution to the coast guard squadron over three years to more than 285,000 pesos.²⁹

Already outgunned by its enemies and weakened by lack of logistical support, actual military confrontation finally crushed Lezo's coast guard. In May 1740, for example, one of his ships, which was escorting a French prize to Cartagena from Portobelo, encountered Vice Admiral Edward Vernon's fleet at Barú. Rather than risk capture or death at English hands, the Spanish crew abandoned both their ship and the prize and escaped onto the peninsula.³⁰

The hardest blow, of course, came in the spring of 1741 when the British attacked the city of Cartagena. In the biggest offensive of the war, Vernon and Brigadier General Thomas Wentworth struck at Cartagena with 21 warships, 170 transports, and 23,000 men. They expected to punish the port into submission. Lieutenant General Blas de Lezo and Viceroy Sebastián Eslava, who jointly directed the defense of the city, had at their disposal only six warships, six support craft, and three thousand troops to counter the invasion force. The defenders of Cartagena, nevertheless, withstood nearly six weeks of siege, bombardment, and assaults, and in May 1741, the British forces withdrew. The British defeat was mainly the result of the ravages of disease and strategic blunders, but Spain could nonetheless claim a dramatic victory. Still, Spanish elation was tempered by the loss of Lezo's entire twelve-ship fleet and the commander's death from wounds suffered in defense of the port.³¹

The realities of coast guard service along the Caribbean coasts of New Granada clearly exhibited the tension between Spanish policy and the inability of both metropolitan and colonial officials to carry it through. Traditionally and legally considered by Spanish officials to be their exclusive domain, Caribbean trade to the Spanish Main was nonetheless dominated by foreigners. To combat this "cancer" in maritime Cartagena, imperial policy makers generally favored the coast guard.

They opted for preemptive control of contraband imports rather than relying solely on the reactive agency of land-based forces. None of the several levels of Spanish government, however, had the resources to provide enough support for formal and regularized coast guard operations. Provincial governors, therefore, licensed privateers and, as mentioned previously, in the late 1730s, Pedro Fidalgo even established a privateering company, the *Compañía de Armadores*, to help remedy the law-enforcement-cum-commerce situation. These corsairs, not always Spanish, complemented the *guardacostas*, but they also competed with the coast guard for prizes and for the rewards thereby accrued. Thus, the competition between the two forces reduced the likelihood of potential profits for all. Furthermore, logistical inadequacies — that is, the weakness of both the imperial and viceregal political economies — meant that coast guard sailors were usually ill fed, poorly paid, and out-gunned by smugglers. Naturally, coast guard crews often balked at going to sea on cruises, and sometimes they went a step further and mutinied. They even abetted, if not participated in, the illicit trade through Cartagena.

The latter behavior symbolized a central paradox of coast guard service in Cartagena. Like the city at large, the coast guard relied on foreign supplies. It used ships purchased in Jamaica and furnished its crews with food and supplies imported from Jamaica. The ability of the Cartagena coast guard and New Granadan privateers to oppose smugglers rested on trade with their avowed enemy. That in turn facilitated the contraband trade they were charged to control and precluded the complete effectiveness of Spanish attempts to curb smuggling.

At the same time, however, a naval presence in port and along the nearby coasts remained a political necessity. The international competition for trade in the Caribbean basin required a demonstration of Spanish sovereignty along the New Granadan coast, especially around the stronghold of Cartagena. Likewise, Spanish law and mercantilist principles demanded that Spanish authorities combat contraband trade. Consequently, the political need for the coast guard and privateers in

contraband deterrence remained.

To their credit, the coast guards and, to a lesser degree, privateers, met this challenge over the fifty years between 1713 and 1763. During the early Bourbon period, Spanish captains and crews continued to sail out in search of smugglers and sometimes boldly attacked superior forces. They captured on average more than one prize every year and produced a mean annual treasury deposit of nearly 3,000 pesos. These statistics are not spectacular, but they reflect at least the long-term tenacity of Spanish maritime forces in the fight against illegal trade in Cartagena, the dilemmas they constantly faced notwithstanding.



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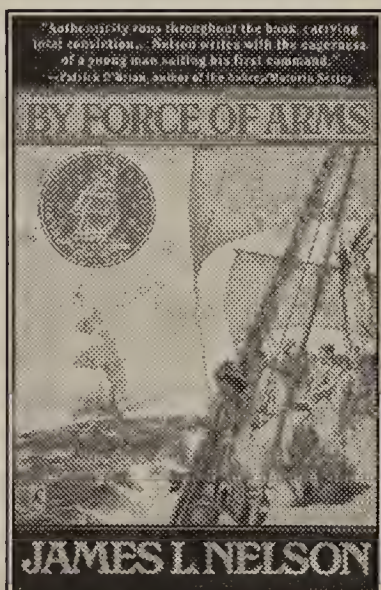
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Daniel French and the Western Steamboat Engine

ALFRED R. MAASS

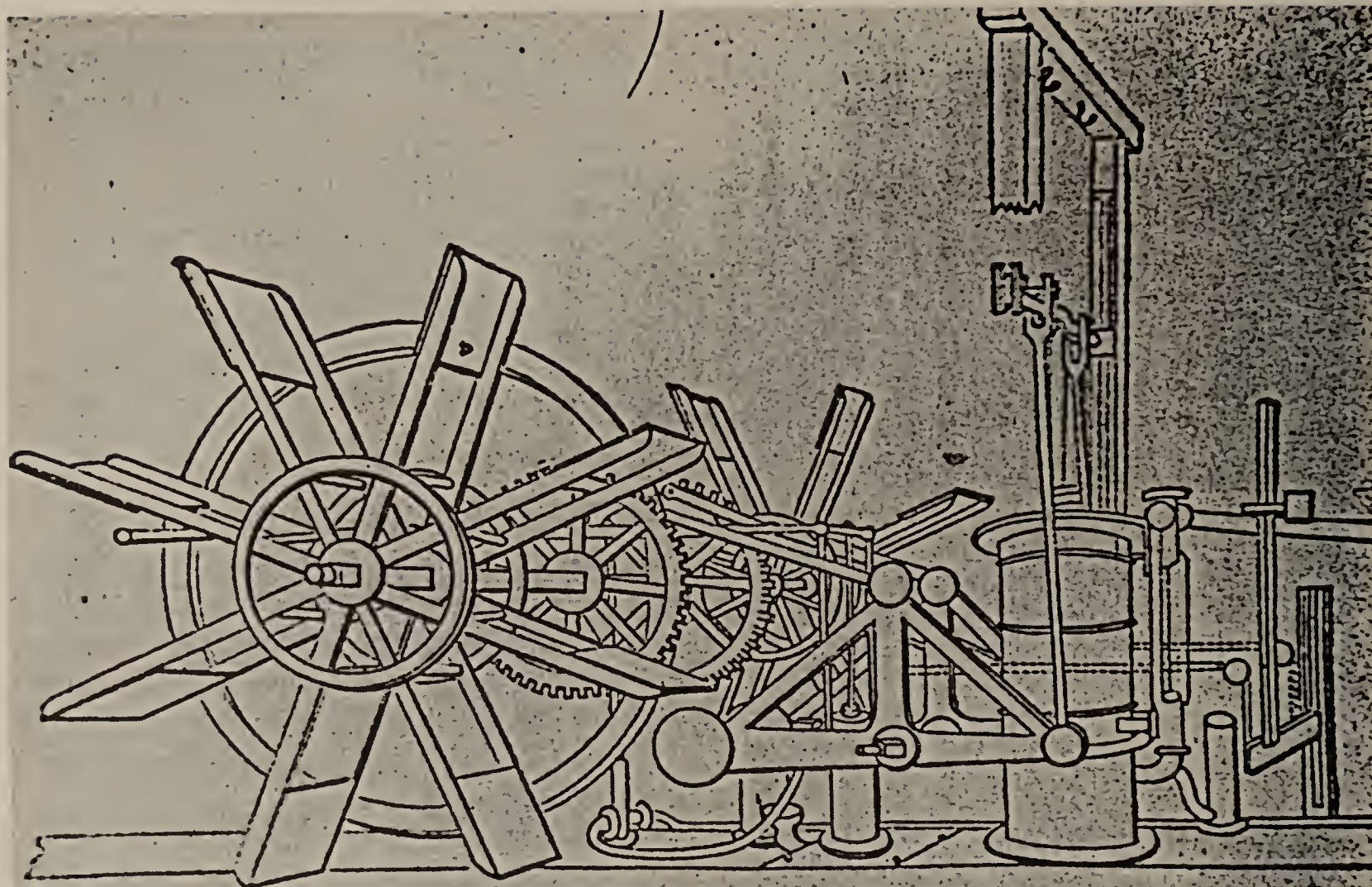
With the demonstration by Robert Fulton of an economically viable steamboat on the Hudson River in 1807, it was only a matter of time before other steamboats appeared on other rivers in the United States. The point has been made that the physical characteristics of those rivers determined the type of steamboat and steam engine that were developed for their use. Certainly, there could hardly be a greater difference between the Hudson River, with its broad and deep tidal waters, and the Ohio and Mississippi Rivers, with shallow waters, narrow and twisting channels, strong currents, sudden fluctuations in depth after storms, full of snags and sawyers. Thus, it is not surprising that the Boulton and Watt type engine, a low-pressure cylinder mounted vertically with a condenser and an indirect connection between the piston rod and the paddle wheel crank, which was successful on the Hudson River, was displaced on the western waters by a high-pressure, non-condensing horizontal cylinder engine with a direct connection between the piston rod and the paddle wheel crank. While Fulton's sidewheel steamboats with a Boulton and Watt engine could function on the western waters, a more efficient system was required. As a result, it was the high pressure, horizontal engine with a direct connection which became standard on western river steamboats.

In 1791, Daniel French (1770–c. 1860) wrote that he conceived an idea of building a boat propelled by steam. James Watt invented the “double-acting” steam engine in 1783:¹ with steam acting alternatively on either side of the piston, enabling the engine to make a power stroke in both

directions, the weight-to-power ratio of the steam engine was more favorable to its use in a boat. In 1787, John Fitch demonstrated a steamboat on the Delaware River, as did James Rumsey on the Potomac River in 1788. Both Fitch and Rumsey claimed that they had conceived the idea of a steamboat in 1785.²

Upriver from French's home in Berlin, Connecticut, Samuel Morey successfully demonstrated a steamboat with a paddle wheel in the bow on Fairlee Pond, Oxford, New Hampshire in 1790.³ While the idea of a steamboat was no longer novel, as word of the experiments of Fitch, Rumsey, and others began to spread, French's method of steam propulsion was highly original. However, French was initially frustrated in demonstrating his vision of the application of steam power which had captured his imagination.

According to Daniel French, the steamboat plan he conceived was reviewed by Barnabas Dunham (1736–1826),⁴ a prominent and wealthy Berlin citizen who, being persuaded of its practicality and usefulness, agreed to be financially responsible for its building.⁵ Few people in Berlin, however, had any knowledge of steam engines or the notion that steam could propel a boat. A project so novel and strange soon came to the attention of the town guardians. Deacon Solomon Sage (1720–1794)⁶ advised French to give up such a wild scheme, claimed French was deranged, and threatened to have a guardian appointed over him.⁷ Since Daniel's father had died four years earlier, leaving him responsible at the age of



The engine of the *Clermont*, showing the complexity of Fulton's indirect connection of piston and paddle wheel crank. From Samuel Ward Stanton, *The Nautical Gazette* 72:1 (3 January 1907), 41.

twenty-one for the welfare of his mother and four sisters, this was a significant threat. French, however, obstinately exhibited his drawings to the Town Selectmen. Colonel Isaac Lee,⁸ a prominent official of the town, supported French's scheme and thought that he should be encouraged. Deacon Sage, however, was not to be denied; the project was ultimately condemned.

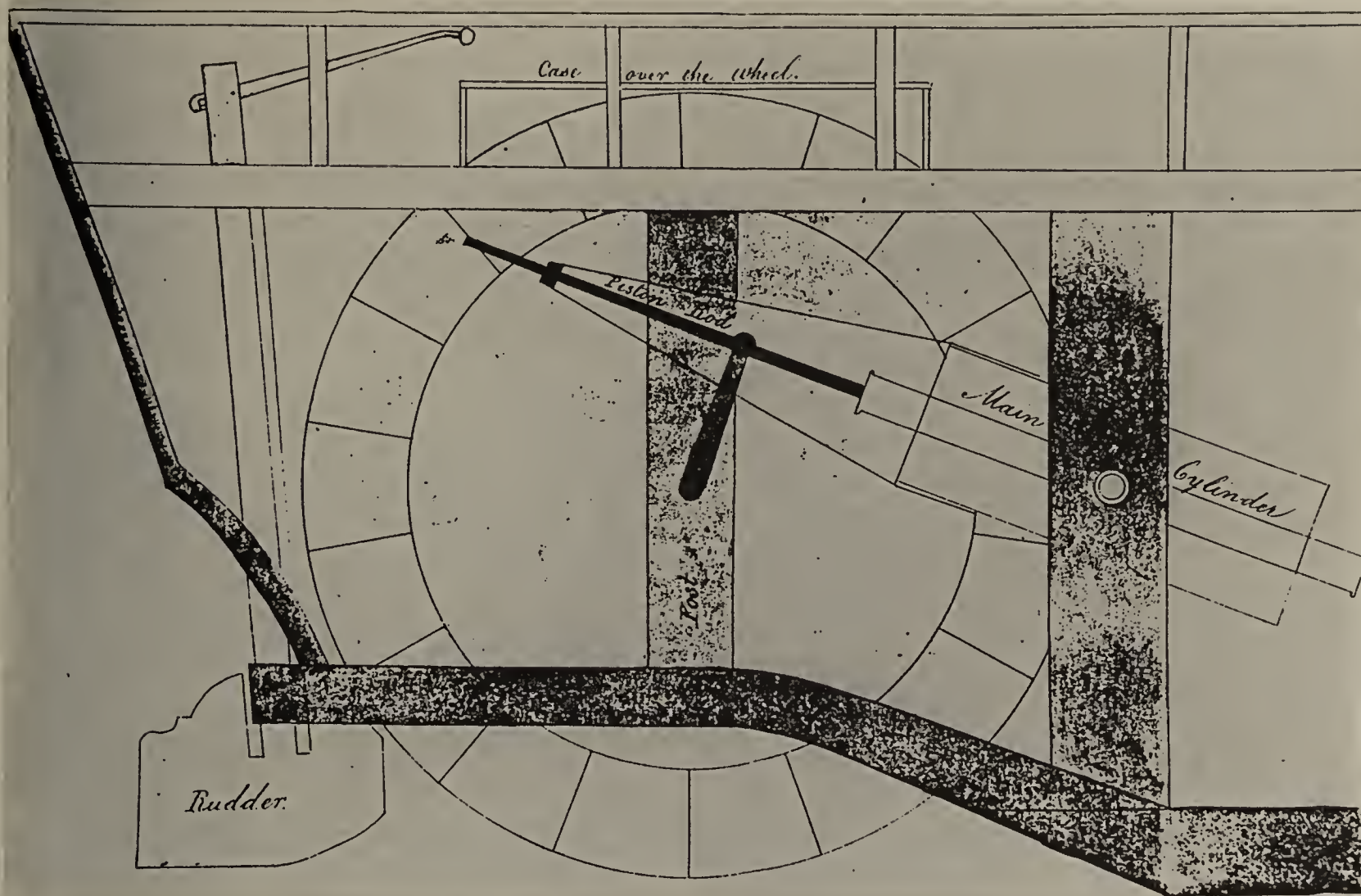
Blocked in his plans for a steamboat, French turned to his invention of a machine to point and head nails from wrought iron rods, as well as a machine to cut and head nails from rolled iron plate. The manufacture of wrought or cut nails was conducted by blacksmiths at this time, pointing and heading each nail by hand. The repetitive nature of their hand manufacture seemed to promise these inventions as the "machine which would make a monopoly and make a future,"⁹ a goal almost universally sought by the Yankees of Connecticut.

While working on his nail machines, Daniel French heard that Elijah Ormsbee of Providence, Rhode Island, had successfully moved a boat under steam on Narragansett Bay at a speed of 3- to 4-mph.¹⁰ The boat was powered by an engine operat-

ing on the old Newcomen principle: steam was used to raise the piston which then was returned to its original position by atmospheric pressure. Learning that David Wilkinson of Pawtucket had cast and bored the iron cylinder and fashioned the necessary connections for the paddles, French visited him. Wilkinson reported on French's visit,¹¹ the care with which he inspected the steam engine, and the interest that he displayed in Wilkinson's tools and workshop.

After his visit to Wilkinson, French returned to perfecting his nail machines, obtaining a patent for both.¹² In 1798, he moved his family to a dam site on West Brook in Middlefield, Connecticut, owned by Jehosaphat Starr and James Casey, for whom he had agreed to build a nail machine.¹³

Having completed the nail machine in November 1801, Daniel and his family moved to Middletown to work on an invention he had begun as early as 1798, a horse-powered machine to cut and shave shingles. Looking for better opportunities, French bought land in New York City. In 1802, he again began construction of a steamboat.¹⁴ (No data have been located on that steamboat.) French soon



Drawing by Nicholas King of Daniel French's method of power transmission by direct connection of the piston rod to the paddle wheel crank. From *Propulsion of Vessels, 1791-1910: Drawings and Specifications of Inventions from Propulsion of Vessels by Steam, Horse, Spring and Man Power*. Presented by Robert Schuyler for the heirs of Robert Fulton, 19 April 1845, with certificate of the Department of State. Deposited in the United States Patent Office 24 April 1845.

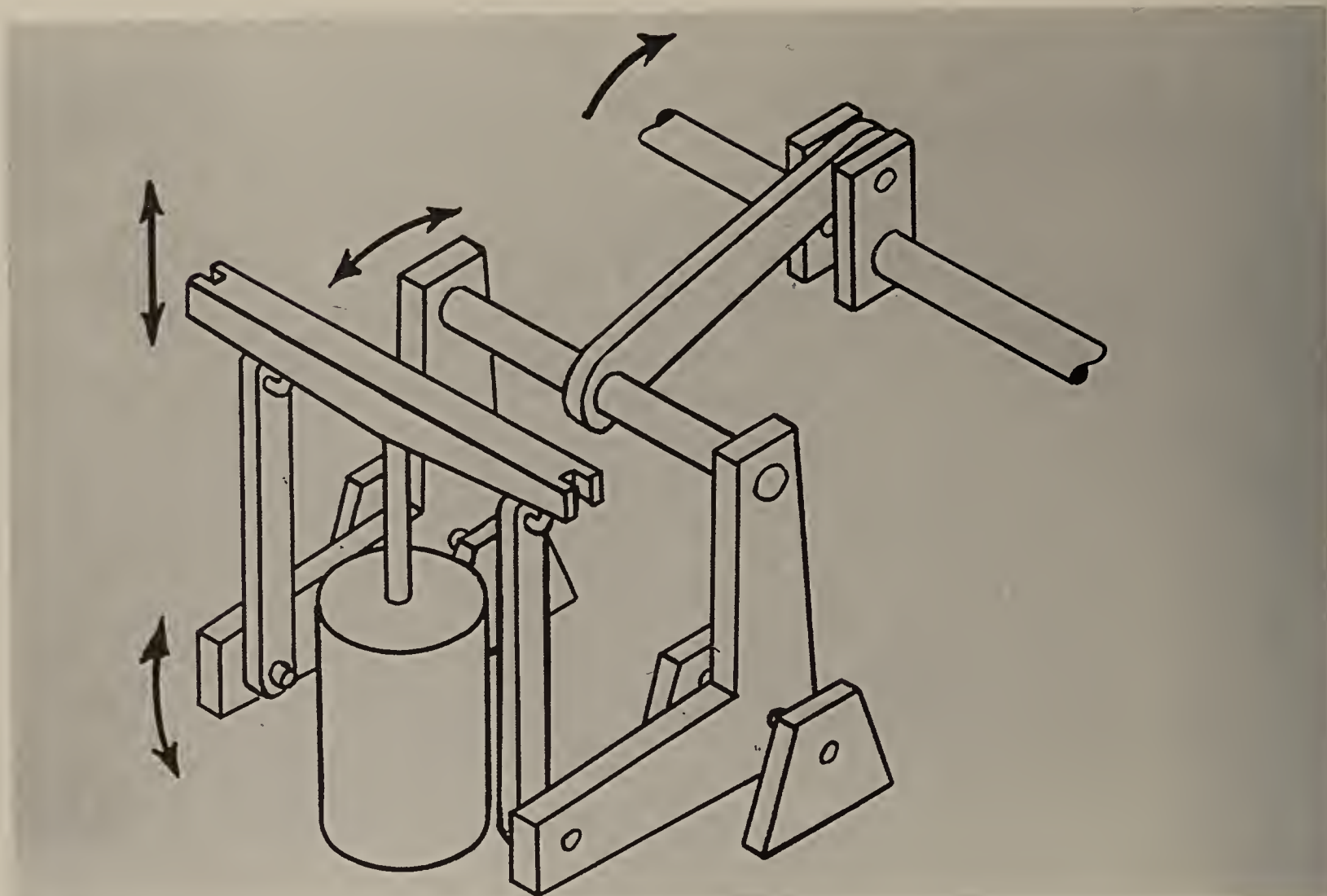
returned to exploiting his shingle machine.

While in Washington, DC, obtaining his patent for the shingle machine,¹⁵ Daniel French became acquainted with Oliver Evans,¹⁶ the well-known Philadelphia mechanic and inventor. Evans was forming a committee of inventors interested in extending the period of time granted for the protection of a patent, for the purpose of lobbying Congress.¹⁷ Evans had fought for years to maintain and protect his automated mill patent, frequently suing to obtain license fees from mill owners who used his plan without payment. His patent on the automated flour mill was due to expire at the end of 1804. A committee chaired by French¹⁸ circularized inventors and patentees for support,¹⁹ and in the winter of 1804, a petition was submitted to Congress.²⁰ During this period, French may have learned of Evans' principles of high-pressure steam ("strong steam") and was appreciative of its advantages. Evans had demonstrated an effective high-pressure engine in February 1803 which drove a

screw mill for the pulverization of plaster of Paris. The committee work so cemented their friendship that Evans not only freely praised French's mechanical ingenuity,²¹ but was also prepared to make castings for French on credit.²²

French was in New York in the fall of 1807 during Fulton's trial with "the steamboat," but was apparently unaware of Fulton's activities. On his return to New Haven in October 1807, French took notice of "Mr. Fulton's new, invented steam boat"²³ which excited such a competitive spirit that he returned to his own steam engine invention. Accepting the charity of New Haven merchant John Adams, French moved his family to Washington, Connecticut.²⁴

In Washington, French completed construction of a model of his oscillating steam engine. To obtain financing for his activities, he signed an agreement with Thomas Cahoon²⁵ to act as his attorney-in-law in order to obtain a patent for the steam engine in his own name as well as to finance



Diagrammatic arrangement of Fulton's bell crank engine demonstrating his power of transmission. Drawing by Cedric Ridgely-Nevett, *American Steamships on the Atlantic* (Newark, NJ: University of Delaware Press, 1981), 19.

the construction of an engine of sufficient size "to make a thorough experiment of the utility of...the engine in some manufacture requiring considerable power."

No description of French's original 1791 concept of a steamboat has been found. From French's patent application and his US patent,²⁶ it is apparent that he designed the first departure from the Boulton and Watt type engine. Fulton, it will be remembered, had purchased a boiler and a Boulton and Watt engine in England which were shipped to New York. While Boulton and Watt supplied the machine parts — piston rod, piston, cylinder, air pump, condenser, valves, and valve gear — it was left to Fulton to design and construct the means by which the engine would transmit the thrust of the piston rod to the paddle wheels. Rejecting Watt's parallel motion, Fulton fitted the piston rod in the vertically mounted steam cylinder with a crosshead which worked in vertical guides. From the crosshead, he suspended connecting rods and two lever beams. From the upper arm of the lever beam, in the form of an inverted T, a connecting rod proceeded to the cranks of the paddle wheel axle.

Gears on the paddle wheel axle drove two flywheels mounted outboard of the hull. Fulton considered this cumbersome and inefficient power train an essential part of his patent.²⁷ This was, in fact, his only original contribution to the patent.

As French designed the engine, there was a direct connection between the piston rod and the paddle wheel crank. This was far simpler than Fulton's indirect mode of power transmission.²⁸ However, it required French to mount his steam cylinder on pivots (trunnions) to permit it to oscillate with the motion of the crank.²⁹ The cylinder oscillated above and below a horizontal position, the axis of the cylinder and the axis of the stern paddle wheel being at approximately the same level. This direct connection, which avoided Fulton's awkward gearing, was also highly efficient in the transmission of power. French's use of high pressure steam reduced the necessary size; hence, the weight of his cylinder thus simplified his manufacturing problems.

French demonstrated his model of the oscillating steam engine in New York in 1808. It was viewed by Professors John Kemp and Samuel L.

Mitchell of Columbia College and endorsed as "simple, just and philosophical and such as promise success."³⁰ A full scale trial was urged. The differences in French's design from that of Fulton's were indeed sufficient to require a full scale trial. The problem, as usual, was that of finding subscribers to invest in the construction of an engine to provide an adequate test.

An opportunity for a full scale test of his oscillating engine arose from an announcement by New York Common Council of the opening of the Paulus Hook Ferry. The Paulus (Powles) Hook Ferry to Jersey City was a vital link in the most direct stage connection from New York to Philadelphia. However, strong tides on the Hudson River, adverse winds, and winter ice provided significant difficulties for the sail ferries used at the time. The success of steam navigation provided an obvious solution. Since the lease on the Paulus Hook Ferry was due to expire in the spring of 1811, application was opened to someone who could construct and operate a steam ferry. The Jersey Association of Elisha Boudinot of Newark and Robert Fulton of New York applied for the lease in July 1809.³¹

In the fall of 1809, Daniel French prepared for the ultimate test of his concept by construction of a steam ferry for the North River. The boat, 57' long by 10' in breadth, was built with a single covered stern paddle wheel³² recessed within the lines of the hull supported by the double stern. French had the cylinder cast, then bored and polished to an internal diameter of 8½". The piston had a 32" stroke. The main cylinder was supported on two gudgeons mounted on frames resting on the bed of the boat. As steam was admitted to either end of the piston, the movement of the piston rod caused a rotation of the paddle wheel. Simultaneously with the rotation of the paddle wheel, the cylinder and piston oscillated to accommodate its displacement by the crank. This direct connection with its simple and observable function was easily understood by anyone.

Experiencing the usual difficulties in new construction, French approached New York Common Council in November 1809 to say his boat was almost complete and to request that no lease on the Paulus Hook Ferry be granted until he had an opportunity to display it. Fulton, despite the July

application, was working on torpedoes and had done nothing about demonstrating a ferry.

French's ferry boat was finally ready for trial at the end of January 1810. He placed an advertisement in the New York *Evening Post* on 2 February, describing the virtues of his ferry and inviting subscribers. On 12 February, he again petitioned Common Council for the Paulus Hook Ferry lease. With no immediate response by the Committee selected by Common Council, he issued a direct invitation to the Committee members on 26 February. An inspection was set for the following day.³³

The ferry boat, awaiting trial at the Courtland Street wharf on the Hudson River, filled the air with thick, black smoke. The iron-bound wooden boiler, heated through a single iron flue, was not steam tight. With steam leaking from the boiler and smoke from the chimney, the boat must have appeared a catastrophe ready to happen. With the Committee members on board, Captain French opened the single lever that introduced steam to the cylinder and started his boat. The ferry boat was a success. The trip across the North River required twenty minutes against a strong breeze, while the return trip was accomplished in sixteen minutes with a speed of 6 mph.³⁴

French's engine was praised as plain and simple, requiring fewer parts and cheaper to build than Fulton's low-pressure boats. With fewer parts in the power train, there was no loss of the steam force to friction. Steam pressure on the piston of French's boat had not been recorded, but the small size of the piston, 8½", demonstrated that French used steam well above the pressure of the atmosphere.

With obvious sarcasm, Daniel French recorded the criticisms of his engine voiced by the local citizens. These were:

- being new and American, it could not be as good as the old English (Fulton) plan;
- it was too light, as if the weight of metal of an engine of the same size and bore contributed to its power;
- it was too simple and would be better if more complex, as if simplicity destroyed the power of the engine; and

- it was not as good as others, as it did not give enough work to engineers.
There, the matter rested, awaiting decision³⁵

In New Haven in 1806, Daniel French devised a horse-powered brick machine which forced unprocessed clay into cast iron molds under high pressure. While waiting in New York for the decision of the Common Council, French displayed a model of the brick machine, sought subscribers, and successfully sold several shares to the patent rights.³⁶ Since the brick machine showed signs of financial promise,³⁷ French contemplated an extensive campaign to promote it with trips to Washington City, Georgetown, and as far south as Richmond, Virginia. He invited Nezhiah Bliss,³⁸ who as clerk in Adams' store in New Haven was well known to the family, to come to New York to live with his family during his absence.

In the spring of 1811, Common Council granted the Paulus Hook Ferry lease to Fulton. French's application was rejected by Common Council due to the legal difficulties threatened by Fulton's exclusive right to the use of steam in New York State waters.³⁹

Wilkinson, in recounting the story of French's visit to inspect his steam engine for Ormsbee's boat, also told a story of French's employment by Fulton to draft plans for Fulton's steamboats.⁴⁰ French was known to be a competent draftsman from his various patent applications, but whether the story is more than apocryphal is unknown. There is Nezhiah Bliss' recollection of his own frequent visits to Fulton's house who relates, with pleasure, Fulton's instruction and interest in Bliss' career. That an unknown youth of twenty or so years should have access to Fulton, then at the height of his fame, suggests that Bliss' accessibility to Fulton was due to his presence in the French household.

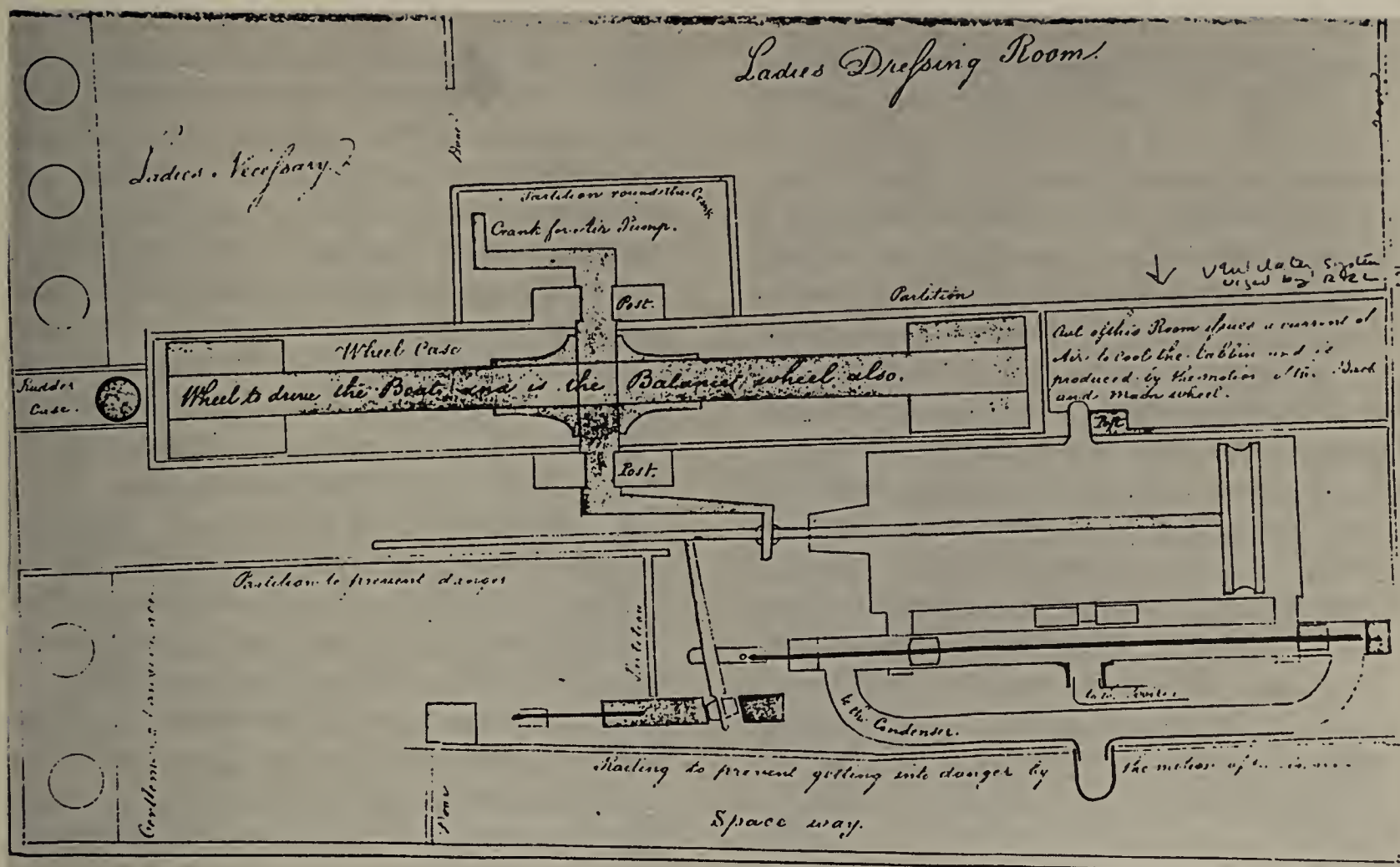
Following rejection of his ferry, French contemplated a line of steamboats through Long Island Sound between New York City and Norwich, Connecticut.⁴¹ However, he was unable to obtain sufficient subscriptions to finance the enterprise. Thus, on his return from Virginia, French moved his family to Philadelphia in December 1811, after an agreement with James Ray to

build his brick machine.⁴² French established a steam engine shop at 452 North Front Street.⁴³

Despite his avowed intention to pursue the brick business, French was soon involved in manufacturing his oscillating engine for a steam ferry on the Delaware River. William Cooper, who owned Cooper's Point, New Jersey, and the ferry line from Philadelphia with a group of Philadelphia and Camden businessmen, entered into an agreement⁴⁴ with French to supervise the construction of a ferry, estimated to cost \$3,500.⁴⁵ The ferry, named *Rebecca* after Cooper's wife,⁴⁶ had a 60' keel and a 14' beam. She was propelled by a single covered 8' diameter stern wheel recessed into the lines of the hull constructed with fixed angular buckets powered by an 8 to 12 HP oscillating engine. This was similar to French's New York ferry engine, but had a 3' stroke. The iron-bound wooden boiler with an internal cast iron flue was larger than the one used previously in New York.

French estimated the weight of his engine at about one ton; a corresponding 24 HP low pressure engine was estimated at twenty tons. Thus, the savings in weight (at equivalent horsepower) was about nine-tenths. The resulting reduction in weight lessened the draft of the ferry and consequently reduced the power needed to propel it.⁴⁷ French's broadside listed in detail the advantages of his ferry. Starting ferry service that summer, the *Aunt Becky*, or *Wheelbarrow* as she became known, was in use for some time between Arch Street, Philadelphia, and Cooper's Point.

In the fall of 1812, she was inspected by Benjamin Henry Latrobe. Latrobe, an English trained engineer and architect who had immigrated to the United States in 1796, had designed and built the Capitol in Washington,⁴⁸ among other achievements. The financial problems of the government during the embargo and the subsequent war with England in 1812 left Latrobe without a job and with few architectural prospects. Harassed by debts, Latrobe grasped at an opportunity offered by Fulton to act as his agent in Pittsburgh to build two steamboats for The Ohio Steam Boat Company. In the fall of 1812, after his agreement with Fulton in New York, he stopped off in Philadelphia and inspected the *Rebecca*.⁴⁹ Latrobe's letter to Fulton describing the steam ferry has not survived. His letter to William Cooper, however, demonstrated



Drawing by Nicholas King from Daniel French's patent application showing the stern paddle wheel recessed within the lines of the hull and demonstrating the structural simplicity of the direct connection of the piston rod with the paddle wheel crank for a stern wheel steamboat. *Propulsion of Vessels, 1791-1810*, US Patent Office.

his allegiance to the Fulton cause.⁵⁰ Ignoring the advantages of French's direct connection and the use of high pressure steam, Latrobe praised French as "an ingenious mechanic" on the basis of his brick machine. Latrobe then discounted the oscillating engine as equally as difficult of manufacture as the "shackle bars" (Fulton's complicated power train) and stated that the horizontal cylinder would soon wear to an elliptical shape and no longer hold steam.

French's engine was simpler to manufacture. This claim is supported by activities of fifteen-year-old Daniel, Jr., who built small oscillating engines to operate bellows for his father's blacksmith's fire as well as the lathes for turning cylinders and finishing both brass and iron pieces of the engine.⁵¹

Lacking opportunities in the east, French and several of his sons traveled to Brownsville, Pennsylvania in the late fall of 1812 with the expectation of establishing a steam engine construction business there. Sarah, French's wife, remained in Philadelphia to give birth to their youngest son.

Brownsville, at the end of a trail that became the National Road, was the site of extensive embarkation as families emigrated to the west and where travelers purchased boats and supplies prior to descending the rivers. French purchased two lots in Bridgeport, across Dunlap's Creek from Brownsville, and immediately began construction of a dwelling⁵² and a steam engine shop, the first productive steam engine business west of the Allegheny mountains.⁵³ With tools brought from his engine shop in Philadelphia, he promptly arranged for the casting of a small cylinder and began the manufacture of an oscillating engine for a small keel boat modified for a recessed stern wheel. This "wheat and corn boat" was utilized by George Evans to transport grain on the Monongahela River for his steam flour mill.⁵⁴ No further details of this boat have come to light.

There is also little detailed information available on French's construction of the high-pressure oscillating engine employed in the second steamboat recorded to steam the Ohio River.⁵⁵ He built the *Comet*, a recessed stern paddle wheel boat, 52'

in length with a beam of 8', of 25-ton burden, in Pittsburgh for Samuel Smith. Completed in the spring of 1813, she undertook her maiden voyage to Louisville in July. This voyage was not very successful; Latrobe claimed that she had to be poled back to Pittsburgh that fall.⁵⁶ This, however, did not deter Fulton and Livingston from advertising in the *Pittsburgh Gazette* that a suit against Daniel French and the owners of the *Comet* was to be brought for infringing on Fulton's 1809 patent.⁵⁷ No evidence has been found on the actual instigation of that suit.⁵⁸ French, in a letter to William Thornton, chief of the Patent Office, complained of the difficulty of utilizing his steam engine patent in the face of opposition by both Fulton and Evans.⁵⁹

In any case, the *Comet*, with its engine reworked that fall, departed that winter for New Orleans, arriving 25 February 1814.⁶⁰ After making several round trips to Natchez, the engine was removed, reportedly to power a saw mill or gin on a cotton plantation.

While Daniel French was improving the *Comet's* engine, he was also attempting to raise funds to build a bigger steamboat by organizing a steamboat company in Brownsville. Daniel, Jr. constructed a small oscillating engine for use in "a pleasure boat for a gentleman [George Shiras]⁶¹ in Pittsburgh." The "skiff," 30' long with a recessed stern wheel, employed a double circular boiler to provide high-pressure steam to the engine.⁶²

Following the river descent of the *New Orleans*, Fulton's "Pittsburgh" boat to New Orleans, reports of her large profits in trading between New Orleans and Natchez came back upriver to Pittsburgh,⁶³ even if the steamboat itself could not. The public awaited someone to offer them an opportunity to reap a similar reward. Daniel French, recognized in Bridgeport and Brownsville as an ingenious mechanic and an experienced steamboat builder, persuaded local citizens to form a joint stock company to build a line of steamboats.

In August 1813, the Monongahela and Ohio Steam Boat Company opened its books. Twenty-four of the most affluent and prominent citizens of Brownsville subscribed \$11,000 for the building of a boat.⁶⁴ She was to be used as a packet, to run a routine schedule between Pittsburgh and the Falls of Ohio (Louisville).⁶⁵ The company planned to

construct another steamboat to run between Brownsville and Pittsburgh on the Monongahela River, and a third boat to run between Shippingport, Louisiana, and New Orleans, thus providing a line of boats to trade between Brownsville and New Orleans. The Falls of Ohio dictated this arrangement of multiple boats, for in low water a steamboat would be unable to descend or ascend the Falls. In high water, the strength of the current could block an ascension.

The keel was laid in the fall of 1813.⁶⁶ Building of the hull proceeded rapidly on the bank of the river above Dunlap's Creek on land owned by Israel Gregg. With a 3" x 3" longitudinal keel to absorb the brunt of collisions with rocks and shoals, the long, narrow hull was ribbed and planked over. Her square stern was fitted for a recessed paddle wheel. Engineer Charles Soudinger and John Livingston, supervisor for the construction of Fulton's two new steamboats — the *Aetna* and *Vesuvius* — then being built in Pittsburgh, came up to Brownsville in February 1814 to view the activities. Stoudinger described it to Benjamin Henry Latrobe, who wrote confidently to Fulton that it was "...a wretched affair, unfit to resist the action of the engine which is in it."⁶⁷

Enrollment records from the US Custom House in New Orleans for the *Enterprise*, as she was to be named, are missing. As a consequence, authentic data on her tonnage and dimensions are not available. Daniel French put her burden at "about 30 tons."⁶⁸ Characterized as a lightly built barge, contemporary discussion of the *Enterprise* also states that, as with other steamboats on the river, she could not carry but about half her weight.⁶⁹

Stoudinger, on his visit to her construction site, estimated the keel at 80'. Latrobe, upon viewing her at Pittsburgh on her maiden voyage, estimated her dimensions at 60' or 70' in length by 15' in breadth.⁷⁰ She had a shallow draft; Latrobe, inspecting a shoal the *Enterprise* passed daily, wrote that no boat of greater than 2' 6" could pass in low water.⁷¹

The 8'-diameter recessed stern wheel was hidden from view by the boat's counter astern. The stern wheel was advantageous, for there the paddle wheel was least liable to be damaged by floating debris, sawyers, sandbars, banks, or shoals to which side wheel boats were frequent victims. The

rudder, placed aft of the paddle wheel, was also at its most effective position, catching the first movement of the water and acting immediately.

As Latrobe described in 1814, the *Enterprize*, "with her works entirely in her afterpart, she had a cabin from the chimney forward, part above and part below the gunwales."⁷² Cramer described her as a handsome, well constructed boat with good accommodations for between thirty and forty passengers, the ladies' compartment separate from the gentlemen's.⁷³ Her accouterments included an anchor, a winch forward of the mast, two masts, sails, and a saluting gun on the bow.

The oscillating cylinder engine was constructed by French according to his patent. The cylinder was 19½" in diameter with a 3' stroke. Employing a simple slide valve gear, steam entered and was exhausted from the cylinder through the gudgeons on each oscillation of the cylinder. Steam was supplied by two cylindrical boilers 25' long and about 30" in diameter. The boilers were formed of 3/16" thick plates of rolled iron, cold riveted together and closed at each end by a plate of cast iron.⁷⁴ French's boilers had a flue through them to increase the heating surface for the efficient production of steam, a procedure long known. Two boilers provided a more regular supply of "strong steam" employed by French in defiance of Evans' 1804 patent. The boilers mounted horizontally, side by side, with external fire boxes readily accommodated within the depths of the hold. With sixty pounds of steam pressure from her boilers,⁷⁵ making 24 strokes per minute, she was estimated to be of 18–24 HP.

The significant engineering advances built into the *Enterprize* — high-pressure steam, horizontal oscillating cylinder engine, efficient power train, and economy of weight — all contributed to the greater power of French's boat.

Launched in May or June of 1814, the boat underwent builder's trials. Latrobe provided Fulton with one hopeful note, "French's boat sticks on acct. of the badness of her engine."⁷⁶ The *Enterprize* began her 7 June maiden voyage from Brownsville on a "fresh" (a rise in the water level of the river), arriving in Pittsburgh on 8 June.⁷⁷ Captain Israel Gregg, who had piloted a flatboat down the Mississippi River as early as 1803, was in command; Erasmus W. Benton was chief

engineer.⁷⁸ Speed trials were conducted at Pittsburgh; she was estimated to make 3½ mph upstream against the strong 3- or 4-knot current of the Monongahela River and perhaps as much as 10 mph downstream. Starting downriver, the *Enterprize* reached Cincinnati on 17 June and Louisville on 21 June. She then returned to Pittsburgh.

Spring navigation on the Ohio River normally terminated in June due to low water. The *Enterprize*, with her shallow draft, however, continued to trade along the river, making numerous trips between Steubenville and Charleston, Virginia (now Wellsburg, West Virginia) during August and September.⁷⁹ On 6 December, she returned to Pittsburgh from Steubenville with a full cargo in three days, then completed the 65-mile upstream voyage on the Monongahela River to Brownsville in seventeen hours (3.8 mph).⁸⁰

When the *Enterprize*, trading along the Ohio River between Pittsburgh and Louisville, proved to be a success, the Company began building its second boat in their line of planned steam packets. This boat, to be named *Dispatch* and intended primarily for passengers, was to be run on the Monongahela River between Brownsville and Pittsburgh.

Benjamin Henry Latrobe in Pittsburgh was building two steamboats to complete the Ohio Steam Boat's line of packets to meet the *New Orleans* in Shippingport to handle their trade between Pittsburgh and New Orleans. Latrobe had many problems to contend with in the building of Fulton's boats, and such difficulties placed great stress on his ego. French's very success in manufacturing and selling steam engines caused Latrobe to betray his anger with the statement: "I am laughed at by my friends" in writing to Fulton about the "importance to know what you can do toward stopping this piracy."⁸¹

Latrobe, as Fulton's agent, published in the *Pittsburgh Gazette* of 8 and 15 July 1814 "That action will be brought against each individual... using the patent rights of Fulton." Latrobe was later able to write to Fulton with great glee, "my advertisement has had a great effect in respect to French's credit. His second subscription does not fill."⁸² French was certainly unsuccessful in raising the estimated \$5,300 needed to build the *Dispatch*, having sold only six additional \$500 shares in the

Company.

The *Enterprize* began her epic voyage in December. With the war against Great Britain going badly and a British attack anticipated at New Orleans, she was loaded with ordnance and military stores at the arsenal at Pittsburgh. Henry M. Shreve was placed in command due to his extensive knowledge of the lower Ohio and Mississippi Rivers, gained through the years as a keel boat captain. Departing Pittsburgh 21 December,⁸³ she reached New Orleans on 9 January, the day after the Battle of New Orleans. Since General Jackson had proclaimed martial law on 16 December,⁸⁴ the *Enterprize* was taken over for military use. With the signing of the armistice, she was released from government duty 15 March 1815, and Shreve planned her homeward trip. She was temporarily delayed by legal seizure on 1 May by Edward Livingston, as Fulton's heir, for violating Fulton's monopoly of navigating the waters of the State of Louisiana by steam. It was 6 May before Shreve and the *Enterprize* were finally able to depart New Orleans, leaving behind the unsettled court action brought by Livingston.

As the first steamboat to ascend the Mississippi and Ohio Rivers, *Enterprize's* return upstream to Louisville in twenty-five days gave her great fame. The epic voyage to Pittsburgh brought an enthusiastic welcome from crowds at every stop along the river. The voyage "...clearly demonstrated the ability of the steamboat to stem the currents of the Mississippi and was a tribute to the mechanical skills of Daniel French, its designer and builder."⁸⁵

By the time the *Enterprize* returned to Brownsville in July 1815,⁸⁶ the *Dispatch*, the Steam Boat Company's second boat, had been launched (5 April) from her construction site at the foot of Water Street in Bridgeport on the bank of the Monongahela River. Steam was first tried on 1 July and it was found, with great pleasure, that Daniel French's modifications of the engine and boat were successful, for an upstream speed was determined to be 9 mph.⁸⁷ This speed far exceeded that of any of the Fulton boats, which averaged about 3 to 5 mph.

The *Dispatch* was a slightly smaller version of the *Enterprize*; a keel of 80' and a beam of 11',⁸⁸ and a burden of about 20 tons.⁸⁹ The recessed

paddle wheel was 8' in diameter. She had dual rudders mounted directly astern on either side of the paddle wheel. Data on cylinder size are not available; however, identified as twin of the *Enterprize*, they were probably 19½" with a 3' stroke. She was described by Robert Rogers, her engineer, as a low-pressure boat because French built in a condenser to supply her boilers with distilled water to avoid the muddy river water, which necessitated frequent cleaning of the steamboat's boilers. Two horizontal cylindrical boilers, 25' in length and about 30" in diameter with inside fire-boxes, supplied strong steam at 40–60 pounds per square inch (psi) on her piston.

Moreover, to capitalize on the great success of the *Enterprize*, the Steam Boat Company promptly started a campaign to sell shares to build a steamboat of 130 tons to complete its line of packet boats to run between Brownsville and New Orleans.⁹⁰ The campaign dragged on into the fall of 1815. It was finally admitted to be a failure despite the distribution of profits arising from her trips trading along the Ohio River.

In desperation, the Steam Boat Company leased the *Enterprize* in November 1815 to James Tomlinson for \$2,000⁹¹ to complete the financing of the *Dispatch*. Even with this income, the *Dispatch* departed Brownsville on her maiden voyage as an open-hulled vessel without accommodations for passengers — which had been her primary purpose.

The maiden voyage of the *Dispatch* became a series of disasters. However, with a change of command — First Engineer H. Bruce replacing Israel Gregg as captain — she finally reached New Orleans on 13 February. At New Orleans, while loading cargo for her return trip, the *Dispatch* was seized by order of Edward Livingston for violating Fulton's exclusive privilege for the use of steam on Louisiana waters. The *Enterprize*, making a second trip to New Orleans (arriving 27 February) may have precipitated this seizure. Livingston, with the court action against the *Enterprize* still unresolved from her visit the preceding year, may have felt his suit in jeopardy if he did not act against the *Dispatch*. In any case, the *Dispatch* was forced to depart without cargo on 1 March. Steaming up to Natchitoches on the Red River, she apparently acquired a cargo there.

Stopping at Natchez on 12 March, she arrived in Shippingport on 5 April. Her speedy ascent of the Mississippi was confirmed in the run from Natchez to the Falls in twenty-four days, beating the *Aetna*, also making her ascent, by a full seven days.⁹² Thus, the stern wheel boats designed by Daniel French and equipped with high-pressure engines clearly demonstrated their superiority over the Fulton steamboats with their low-pressure engines.

By 1816, the ultimate success of the steamboat on western rivers was beyond doubt.⁹³ The voyage of the *Enterprize* from New Orleans to Louisville in May 1815 in twenty-five days of steaming served as a benchmark for voyages of the *Aetna*, *Vesuvius*, and *Dispatch*.⁹⁴

While the Steam Boat Company's project to finance a new boat languished, Henry M. Shreve, with his reputation as a successful keel boatman and as captain of the *Enterprize* with the successful ascent of the Mississippi and Ohio Rivers behind him, moved quickly to establish his own steamboat. He relinquished command to the Steam Boat Company early in July of 1815.⁹⁵ By the end of August, it was announced that he was starting construction of a 400-ton steamboat at Wheeling,⁹⁶ which was intended to run between Louisville and New Orleans. The promptness with which the building was begun on what was to be named the *Washington* demonstrates that Shreve had made up his mind to this course of action even before the failure of the Brownsville Steam Boat Company to raise funds was apparent.

Having grasped that there were two ready sources of money for his steamboat — mercantile business and land speculation — he quickly convinced Neal Gillespie and Robert Clark of Brownsville and Noah Zane of Wheeling to invest.⁹⁷ Clark was a prosperous store owner as well as a director of the Monongahela Bank of Brownsville,⁹⁸ while Gillespie operated the ferry across the Monongahela River. These two men were also partners in a water powered saw and grist mill, which included a wool and cotton carding mill, at the site of the ferry landing. Noah Zane, Ebenezer's oldest son, who had, on his father's death in 1811, inherited considerable wealth, obtained on the sale of land from grants made by the federal government.⁹⁹

Wheeling, located ninety miles south of Pittsburgh on the Ohio River where low water less frequently interrupted navigation, did not suffer from the rapids of the upper river and was a deep water port¹⁰⁰ compared to Brownsville. Recognizing that the shallow waters of the Monongahela River would not provide sufficient depth for the draft of a larger and heavier boat, Shreve decided to build his boat in Wheeling after he contracted with George White, a Scot formerly from the Clyde River, interested and willing to build a steamboat, his first.¹⁰¹ White set up a shipyard on the bank of Wheeling Creek at the north end of the stone bridge over the creek.¹⁰² His contribution may have been the cost of building the hull of the *Washington*. Shreve estimated her total cost at \$18,000.¹⁰³

While secondary accounts of the *Washington* proclaim her as the first of a new series of shallow draft steamboats, the hull did not differ significantly from that of Fulton's steamboats¹⁰⁴ except in the placement of the paddle wheel. It was suggested that the purpose of the stern wheel was to avoid claims of Fulton's patent. The more practical suggestion is that Shreve, recognizing the success of the *Enterprize* in stemming the currents of the Mississippi and Ohio Rivers, was convinced of the greater utility of French's stern wheel design. A stern wheel boat is always the more efficient since it works in "dead water" and travels along with the movement of the boat.¹⁰⁵ Stern wheel boats can more easily pass through narrower channels than side wheelers. Shreve is usually credited with the design of the *Washington*. In adopting French's recessed stern wheel propulsion, however, he must share any credit with French.

The keel of the 400-ton vessel was laid on 10 September 1815.¹⁰⁶ Resources for her construction were readily available at the site of White's shipyard. Shreve utilized the seasoned timbers of an abandoned "old garrison" (Fort Randolph), which was still standing at the junction of Wheeling Creek and the Ohio River in 1815.¹⁰⁷ New timbers, green and unseasoned, were cut from the nearby forest for her planking.

The *Washington*, described later as a "dis-masted frigate,"¹⁰⁸ was a "two-decker" with a recessed stern wheel. A vessel of 403 tons,¹⁰⁹ 136' 9" in length, 24' 9" in breadth and with a 12' 6½" depth of hull,¹¹⁰ she had a 4' draft.¹¹ A sturdily built boat, she had a snag chamber built into her

bow. The great controversy — that of placing the boiler and furnaces on the main deck — was probably Shreve's contribution to her construction, since his experience on the *Enterprise* would have confirmed to him the awkwardness and inefficiency of firing the boilers below deck. He also argued that to make money on transport, a large cargo space was required; thus, her cargo space was about 200 tons.¹¹² A single 8' diameter fixed radial paddle wheel with a 12' width of buckets¹¹³ was easily fitted into the recess in the stern of the hull with only a slight rise in the deck covering the wheel. Twin rudders placed on each side of the paddle wheel¹¹⁴ completed her operational characteristics. She was described upon enrollment as "no masts, square stern, has quarter galleries."¹¹⁵

The *Washington* was a "two-decker" with a 6' hold for her cargo. The six-foot area between decks contained her main cabin¹¹⁶ and three private rooms besides a commodious bar room. This arrangement below the main deck was different from other boats. The main cabin, 60' to 80' long, extending from the center of the boat toward either end, occupied about one half her length.¹¹⁷ Aft of the common cabin was a drawing room and a bed chamber exclusively for the ladies.¹¹⁸ Forward and adjoining the main cabin were the captain's cabin and the bar room. The main cabin contained twenty berths above and below on either side, lighted and aired by twenty ports, each about 20" square.¹¹⁹ Her passenger accommodations, furnished by Peter Yarnell of Wheeling,¹²⁰ were handsome and equipped in a very superior fashion.¹²¹

The single cylinder double acting engine¹²² of the *Washington* was repeatedly described as "made at Brownsville under the immediate supervision of Capt. Shreve."¹²³ Shreve turned to Daniel French for the construction of the 100 HP high-pressure engine¹²⁴ needed to propel the 400-ton *Washington* against the currents of the Ohio and Mississippi Rivers because of the reliability of French's engine on the *Enterprise*. After all, not only had French constructed numerous high-pressure engines, but Shreve was thoroughly familiar with the utility of the high-pressure engine of the *Enterprise*. The problem French faced if he were to use his patented oscillating engine was the size of the cylinder required to generate an estimated 100 HP. The

oscillation of a 24" internal diameter cylinder, especially with a 6' stroke of the piston,¹²⁵ was obviously impractical. However, a single horizontal double-acting cylinder with an oscillating pitman, providing a direct connection between the piston rod and the crank shaft of the paddle wheel, had been patented by William Symington in England in 1801 and used by him on his steam tugboat *Charlotte Dundas* in 1802.¹²⁶ Although Symington's was not a high-pressure engine, replication of the arrangement was an obvious solution to French's problem. The question seems to be whether knowledge of this solution was available to French. Fulton had ridden on Symington's steam-tug and was thoroughly familiar with its capabilities.¹²⁷ From French's frequent meetings with Fulton, it seems likely that he had heard of Symington's horizontal engine and direct connection through an oscillating pitman. Whether credit goes to French or Symington for the design, French constructed the horizontal engine, the first to be utilized on a western steamboat.

The engine of 100 HP was said to weigh only five tons, compared to the weight of the 60 HP low-pressure engine of the *Vesuvius* of 100 tons.¹²⁸ Utilizing high-pressure steam obviated the need of a condenser. The direct connection through the pitman saved the weight of a heavy beam or complicated gearing to transmit the power of steam to the paddle wheel. Omitting the fly-wheel also saved weight.

The single horizontal cylindrical boiler was placed longitudinally amidship on the main deck of the *Washington*¹²⁹ to balance the weight of the engine and paddle wheel placed aft and at the stern, respectively. The boiler, about 36" in diameter and between 30' and 40' in length, had furnaces¹³⁰ at either end to overcome the tendency of steam to cool at this distance from a single furnace. This construction provided capacity for "strong steam."¹³¹ Two pipes conducted steam from the boiler to the engine located under the deck on the after part.¹³¹ An appreciation of the advantages of this arrangement soon resulted in its use on other steamboats. Steam pressure used on the *Washington* has not been recorded, but a minimum of 60 psi on the piston head with the paddle wheel moving at 24 rpm would generate the required 100 HP.

The maiden voyage of the *Washington* to New

Orleans, including the disastrous boiler explosion at Marietta with the deaths of eight passengers and crew, is rarely mentioned, nor is her lengthy return trip. The success of her second voyage to and from New Orleans, in which she matched the speed of the *Enterprize*, is frequently described, including mention of the public dinner for Captains DeHart and Shreve, whose vessels arrived at Louisville within a week of each other. Subsequent voyages of the *Washington* simply increased her fame.

Accounts of early western steamboats have frequently credited Captain Shreve with the design or even the construction of the *Washington* engine. Hunter, in an article about the *Washington*, wrote: "There is reason to believe that if the returns were all in, the accomplishments of a Fulton, a Shreve, an Evans or a French would assume a quite modest position beside the collective contributions of scores of master mechanics, ships' carpenters and shop foremen in whose hands the detailed work of construction, adaptation and innovation largely rested."¹³²

Daniel French was that master mechanic and shop foreman. The construction and erection of a steam engine, despite Fulton's success following 1807, was still full of practical difficulties. Conver-

sion of an oscillating engine, even though mounted horizontally to a fixed cylinder horizontal engine, involved more than the simple transfer of oscillating motion to the pitman. The experiments conducted by French in attaining his successful steamboats provided him with the knowledge, experience, and tools for its design and construction. Thus, the introduction of the western steamboat engine — high-pressure, non-condensing fixed horizontal cylinder with a direct connection — was the accomplishment of Daniel French.



Alfred Maass (Ph.D., University of Wisconsin, 1950) worked as a volunteer at the Hadley Museum and Library in Wilmington, Delaware after his retirement as a research biochemist. Influenced by Professor Eugene Ferguson of the University of Delaware, he became fascinated by the history of the development of early steam technology, specifically western river steamboats.

Notes

1. H. W. Dickinson and Rhys Jenkins, *James Watt and the Steam Engine* (London: Encore Editions, 1981), 139.
2. Henry Whittemore, *Fulfilment of Three Remarkable Prophecies Relating to the Development of Steamboat Navigation and Railroad Transportation* (N.P.: 1909), 3–19. H. Philip Spratt, *The Birth of the Steamboat* (London: Charles Griffin, 1958), 40–42, 45–48.
3. Spratt, *Birth of the Steamboat*, 51–53.
4. Barnabas Dunham (1736–1826), the largest landowner in Kensington (Berlin). (Details from Berlin-Peck Memorial Library, Kensington, CT.)
5. Daniel French, "The Steam Boat Navigation is likely soon to be one of the most important..." ca 1816; Daniel French Papers (M493), Indiana Historical Society Library, Indianapolis, IN; *Western Herald* (Steubenville, OH), 22 March 1816.
6. Probably Deacon Solomon Sage (1720/1794), Sage Genealogy File, Middlesex County Historical Society, Middletown, CT.
7. *Western Herald*, 22 March 1816; Daniel French correspondence to his mother (Bridgeport, PA), 22 May 1816, Middlesex County Historical Society, Middletown, CT.
8. Colonel Isaac Lee (1717–179?), Colonel of the Fifteenth Regiment of Connecticut. See Catherine M. North, *History of Berlin, Connecticut* (New Haven, CT: 1916), 252.
9. W. Storrs Lee, *The Yankees of Connecticut* (New York: Holt, 1957), 217.
10. Spratt, *Birth of the Steamboat*, 56–57.
11. David Wilkinson, "David Wilkinson's Reminiscences. Autumn, 1846," *Transactions of the Rhode Island Society for the Encouragement of Domestic Industry in the Year 1861* (Providence, RI: Knowles, Anthony, State Printers, 1862), 104–195.
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- ber 1769; original in LeBoeuf Collection, New York Historical Society, New York, NY; and Nails, wrought, *Improvements in Manufacturing*, 23 December 1796.
13. Daniel French accounts with Jehosaphat Starr, 10 October 1798 – 3 November 1801; French papers (M493).
 14. Daniel French, "Account of Workmen and Their Work for December 1802," French papers (M493); French correspondence to William Thornton (Bridgeport, PA), 12 February 1814, Thornton Papers, vol. VI, Library of Congress.
 15. United States Department of State, *Letters from the Secretary of State Accompanied with a List of the Names of Persons who have Invented Any New and Useful Art, Machine, Manufacture or Composition of Matter, etc.* (Washington, DC: 22 February 1805); Daniel French, Machine for splitting and shaving shingles, 25 July 1803.
 16. Greville Bathe and Dorothy Bathe, *Oliver Evans* (Philadelphia: Historical Society of Pennsylvania, 1935), 101, 127, 137.
 17. Eugene S. Ferguson, *Oliver Evans: Inventive Genius of the American Industrial Revolution* (Greenville, DE: Hagley Museum, 1980), 41.
 18. Daniel French, "Meeting adjourned to Monday Evening..." no date, French papers (M493).
 19. French, "The Committee appointed to enquire..." no date, French papers (M493).
 20. Oliver Evans, *The Abortion of the Young Steam Engineer's Guide* (Wallingford, PA: Oliver Evans press, 1990), preface iii.
 21. Oliver Evans' testimonial, 8 April 1813; in the possession of Mr. Philip Vogt, Jeffersonville, IN.
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 23. French, hand-written copy of *Herald* (New Haven, CT), 13 October 1807, French papers (M493).
 24. *Propulsion of Vessels, 1791–1810: Drawings and Specifications of Inventions for Propulsion of Vessels by Steam, Horse, Spring and Human Power*. Presented by Robert Schuyler for the Heirs of Robert Fulton, 18 April 1845, with Certificate of the Department of State, Deposited in the United States Patent Office, 24 April 1845. US Patent Office Scientific Library, Arlington, VA.
 25. French, "To Wit, that whereas the said Daniel French..." no date, rough draft, French papers (M493). Despite a search, no evidence has been found to identify Thomas Cohoon/Cahoon.
 26. US Patent to French, "...for an improvement in the steam engine, applicable to boats, mills, etc.," granted 9 October 1809, LeBoeuf Collection; *Propulsion of Vessels, 1791–1810*, US Patent Office Scientific Library: Daniel French, "The Steam Boat Navigation..." French papers (M493); *Western Herald*, 22 March 1816.
 27. Cedric Ridgely-Nevitt, "The Steam Boat, 1807– 1814," *American Neptune* (January 1967), 7; Robert Fulton correspondence to Col. Stevens, 6 December 1808, cited by Samuel Ward Stanton, "a History of the First Century of Steam Navigation," *The Nautical Gazette* (28 November 1907), 363.
 28. David Whittet Thomson, "The Great Steamboat Monopolies Part I: The Mississippi," *American Neptune*, 16 (1956), 37.
 29. James Renwick, *Treatise on the Steam Engine*, (New York, G. & C. & H. Carvell, 1830), 256.
 30. Printed broadside, signed by James Kemp, Professor of Natural Philosophy, Columbia College, and Samuel L. Mitchell; French papers (M493); Samuel Latham Mitchell, New York legislature, US Senator, Professor of Chemistry, Columbia College. See Joseph Kastner, *Species of Eternity* (New York: Alfred A. Knopf, 1977), 205.
 31. John H. Morrison, *History of American Steam Navigation* (New York: Stephen Day Press, 1958), 515– 516.
 32. Captain Frederick Way, Jr., "Early Sternwheelers Were Not Sternwheelers," *Bull. Hist. & Phil. Soc. Ohio* 13 (steamboat 1955), 297–301.
 33. City of New York, Common Council Minutes, 26 February 1810, 89.
 34. Printed broadside, 15 July 1811, "We the subscribers hereby certify that we have examined with care and attention the Steam Boat built here, under the patent of Mr. Daniel French," Kress Library Manuscript and Archive Collection, Kress B. 1923, Harvard University Graduate School of Business Administration, Cambridge, MA.
 35. French, "Merit is entitled to its due..." no date, French papers (M493).
 36. US Patent granted to French, "Brick and Tile Making," 22 August 1810; Edmund Burke, *List of Patents for Inventions and Designs Issued by the United States from 1790 to 1847* (Washington, DC: 1847), 157.
 37. French to his wife (Washington, DC), 23 August 1810. In the possession of Mr. Philip Vogt.
 38. French to William Thornton, 12 February 1814, Library of Congress; Nezhiah Bliss, son of Samuel and Ann Taylor Bliss, a prominent and previously wealthy Hebron, CT family; Aaron Tyler Bliss, *Genealogy of the Bliss Family in America*, vol. I (Midland, MI: published by the author, 1982), 284.
 39. Printed broadside, Kress Library Manuscript and Archive Collection.
 40. Wilkinson, *Reminiscences*, 105; Benjamin Henry Latrobe correspondence to Robert Fulton (Clifton, NJ: Maryland Historical Society, 1976), 118/A 8; Cynthia Owen Philip, *Robert Fulton, a Biography* (New York: Franklin Watts, 1985), 252.
 41. *New York Evening Post* (New York), 2 February 1810; printed broadside (Philadelphia), 1811. Kress Library.
 42. James Ray, attorney and congressional lobbyist; Bathe and Bathe, *Oliver Evans*, 178. Ray was also part owner of Daniel French's steamboat patent and a proponent of navigation of Long Island Sound.
 43. John A. Paxton, *The Philadelphia Directory and Register for 1813* (Philadelphia: T. & B. Kite, 1813).
 44. French, "Condition of Agreement Between Partners for the Ferry," no date. French papers (M493)
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- Jersey Historical Society.
46. George R. Powell, *History of Camden County, New Jersey* (Philadelphia: L. J. Richards, 1886), 366.
 47. Printed broadside, "We the Subscribers Have Examined the Steam Boat Constructed by Daniel French of this City," no date, French papers (M493).
 48. Talbot Hamlin, *Benjamin Henry Latrobe* (New York: Oxford University Press, 1955), 255–305.
 49. John Van Horne, ed., *The Correspondence and Miscellaneous Papers of Benjamin Henry Latrobe. Vol. III 1811–1820* (New Haven: Yale University Press for the Maryland Historical Society, 1988), 340, 383.
 50. Latrobe to William Cooper, Philadelphia, 24 October 1812, Carter & Jeffrey, eds. *Microfiche Edition*, 103/C12.
 51. French, "An other advantage to Mr. French's plan is...", no date. French papers (M493).
 52. French to his mother (Bridgeport, PA), 22 May 1816, Middlesex County Historical Society.
 53. French's steam engine shop was preceded by the Pittsburgh Engine Company founded by Oliver Evans in 1811 with his son George (1785–1830) and Louis Stephens as partners. The machine tools necessary were made at Oliver Evans' Mars Works in Philadelphia and transported over the mountains to be installed in the new building in 1812. The evidence, however, is that George Evans manufactured his first steam engine in 1814.
 54. Zadok Cramer, *Pittsburgh's Magazine and Almanack for the Year 1813*, 49–50; Latrobe to Fulton, 1 May 1814, *Microfiche Edition* 116/E12.
 55. *Pittsburgh Gazette* (Pittsburgh, PA), 2 April 1819.
 56. Latrobe to Fulton, 1 March 1814, *Microfiche Edition* 115/B8.
 57. *Pittsburgh Gazette*, 15 March 1814.
 58. Louis C. Hunter, *Steamboats on the Western Rivers* (Cambridge, MA: Harvard University Press, 1814), 13.
 59. French to Thornton, 12 February 1814, Library of Congress.
 60. New Orleans, Louisiana Collector of Levee Dues, Register of flatboats, barges, rafts and steamboats in the Port of New Orleans 1806–1843, Vol. 2, 25 February 1814.
 61. George Shiras (1774–1840). See John Van Horne, ed., *The Correspondence*, Vol. III, 540.
 62. French to his mother, 22 May 1816.
 63. Cramer, *Navigator*, 8th ed. (Pittsburgh: Cramer, Spear & Eichbaum, 1814), 31–32.
 64. List of stockholders in the Monongahela and Ohio Steam Boat Company. "To the Honorable Judge of the District of Louisiana..." supplemental answer, A. L. Duncan, filed 14 February 1816, LeBoeuf Collection.
 65. *Pennsylvania Mercury* (Pittsburgh, PA), 10 August 1814.
 66. Franklin Ellis, *History of Fayette County, Pennsylvania* (Philadelphia: L. H. Everts, 1882) 2:474.
 67. Latrobe to Fulton, 1 March 1814, *Microfiche Edition* 115/B8.
 68. French to Jacob Bowman, 14 October 1815, Larwill Family Papers, Mss. 154, Ohio State Historical Society.
 69. *Western Spy* (Cincinnati, OH), 20 October 1815.
 70. Latrobe to Fulton, 9 June 1814, *Microfiche Edition* 118/A8; Leland Johnson *The American Canal Guide*, Part 4 (May 1988), 20, "...boat traffic through the falls was restricted to craft up to 14' wide."
 71. Latrobe to Fulton, 9 August 1814, *Microfiche Edition* 119/B7.
 72. Latrobe to Fulton, 9 June 1814, *Microfiche Edition* 118/A8.
 73. Cramer, *Pittsburgh Magazine and Almanack*, 61–62.
 74. Oliver Evans to Judge R. Peters, 8 September 1814, incorporating a letter from his son George; Judge Richard Peters Manuscripts, Vol. XI (Historical society of Pennsylvania: Philadelphia PA), 50; David Thomas, *Travels Through the Western Country in the Summer of 1816* (Auburn, NH: David Rumsey, 1819; reprint ed. Hafner Publishing, Hartford, CT, 1970), 62.
 75. Evans to Peters, 8 September 1814.
 76. Latrobe to Fulton, 29 May 1814, *Microfiche Edition* 117/E1.
 77. *Pennsylvania Gazette*, 10 June 1814.
 78. Erasmus W. Benton correspondence, New Albany, IN, 7 August 1830, "Communications received by the Committee of the Franklin Institute on the Explosions of Steam Boilers," *Journal Franklin Institute* (Philadelphia: 1832), 20–33.
 79. Latrobe to Fulton, 9 June 1814, *Microfiche Edition* 118/A8.
 80. *American Telegraph* (Brownsville, PA), 14 December 1814.
 81. Latrobe to Fulton, 24 July 1814, *Microfiche Edition* 119/B7.
 82. Latrobe to Fulton, 15 July 1814, *Microfiche Edition* 119/A6.
 83. A. Edwards, "Report of the Departure of Boats, Loaded with Munitions of War, from this Place (Pittsburgh) to Baton-Rogue and N. Orleans," National Archives, Washington, DC.
 84. *Mississippi Republican* (Natchez, MS), 21 December 1814.
 85. Hunter, *Steamboats on the Western Rivers*, 18, footnote.
 86. *American Telegraph*, 5 July 1815.
 87. *Niles' Weekly Register*, Vol. 8 (Baltimore, MD: 5 August 1815), 404.
 88. *Robert Rogers Memoranda*, typescript, prepared 12 June 1901 by James S. Rogers, in the possession of Dr. Jonathan J. Rogers, Philadelphia; see Ellis, *History of Fayette County*, 474–477.
 89. French to Bowman, 14 October 1815.
 90. *American Telegraph*, 9 August 1815.
 91. *Western Herald*, 24 November 1815.
 92. *Mercury* (Pittsburgh, PA) 11 May 1816.
 93. *American Telegraph*, 1 May 1816.
 94. Secondary accounts frequently credit Captain Shreve's trip in the *Washington* in the spring of 1817 from Louisville to New Orleans and return in forty-five days as the voyage "that convinced a despairing public that steamboat navigation would succeed in western waters." Henry McMurtrie, *Sketches of Louisville* (Louisville, 1819), 202. These authors, while quoting or paraphrasing McMurtrie, ignore numerous successful voyages before that of the *Washington*. Hunter, *Steamboats on the Western Rivers*, 17–19. Indeed, the *Washington's* upriver trip in 1817, made in twenty-five days, just equaled that of the *Enterprize* on her first upriver trip.

95. Ellis, *History of Fayette County*, 474, records the event somewhat differently: the *Enterprise* "was pressed into government service [in New Orleans] to carry troops and stores and continued to do so till the close of the war [March 1815]. Shreve then started for Pittsburgh with considerable money, but on the way up, the boat was robbed (as he said) of all of it. She finally arrived at Pittsburgh and the Company got possession of her again."
96. *American Telegraph*, 30 August 1815.
97. *Niles' Weekly Register*, X (20 July 1816), 348–349. Although this was a new investment for Clark and Gillespie, Noah Zane was a shareholder in the Monongahela and Ohio Steam Boat Company; Mississippi Set, Le-Boeuf collection.
98. *History of Fayette County*, 426.
99. Doug Fetherling, *Wheeling, An Illustrated History* (Woodland Hills, CA: Windsor Publications, 1938), 25; William F. Gephart, *Transportation and Industrial development in the Middle West*, Vol. 34, No. 1, *Columbia University Studies in History, Economics and Public Law* (New York: Longmans, Green for Columbia University, 1909), 31, 48.
100. Gephart, *Transportation*, 58–59.
101. Gibson Lamb Cranmer, *History of Wheeling City and Ohio County, West Virginia and Representative Citizens* (Chicago: Biographical Publishing, 1902), 74; J. H. Newton, G. G. Nichols, and A. G. Sprankle, *History of the Pan-Handle, Being Historical Collections of the Counties of Ohio, Brooke, Marshall, and Hancock, West Virginia* (Wheeling: J. A. Caldwell, 1879), 184.
102. Cranmer, *History of Wheeling*, 74.
103. *Ohio Western Herald*, 10 November 1815.
104. Louis C. Hunter, "The Invention of the Western Steamboat," *Journal of Economic History*, 3 (1948), 201–220.
105. David Thomas, *Travels Through the Western Country in the summer of 1816* (Darien, CT: Hafner Publishing, 1970), 62. H. DeB. Parsons in discussion of John M. Sweeney, "River Practices of the West," *Transactions, American Society of Marine Engineers*, 9 (1887–1888), 658.
106. *Niles' Weekly Register*, 10 (20 July 1816), 348–349.
107. Clifford M. Lewis, "The Reconnaissance Expedition of Two French Navigators," *West Virginia History* 43 (Fall, 1981), 28; Cramer, *Navigator*, seventh ed. (Pittsburgh: Cramer, Spear & Eichbaum, 1811), 83–84.
108. Samuel Treat, "Political Portraits with Pen and Pencil, Henry Miller Shreve," *US Magazine and Democratic Review*, 22 (February 1848), 108. A frigate is a two-decked ship with gunports below the main deck; Charles G. Davis, *American Sailing Ships, Their Plans and History* (New York: Dover Publications, 1984), 82, 83, illustrations.
109. *New York Evening Post*, 1 July 1819.
110. Minor discrepancies in the reported dimensions occur. The original enrollment of the *Washington* (23 October 1816, Enrollment 38) is missing from the National Archives. Her second enrollment (19 May 1818, Enrollment 57) is torn and in poor repair. Thus, photocopies are difficult to interpret. Hunter, *Journal of Economic History* (1943), 211, and *Steamboats on the Western Rivers*, 77, have interpreted the data as follows:
- | | Length | Breadth | Depth of Hull |
|------|--------|---------|---------------|
| 1943 | 13–8 | 2–.75 | 12.55 |
| 1949 | 139.9 | 24.70 | 12.30 |
111. *Western Herald*, 10 November 1815. Reducing the draft of the *Washington* was not a priority for Shreve, since the boat was intended to operate in the relatively deeper waters below the Falls of Ohio.
112. R. Pierce Beaver, "Joseph Hough: An Early Miami Merchant," *Ohio Archaeology And History Quarterly*, 45 (1936), 37; 225 tons, *Western Herald* 10 November 1816; or 250 tons, *Pennsylvania Gazette*, 17 April 1816.
113. Edward D. Seeber, trans., Edouard de Montule, *Travels in America, 1816–1817* (Bloomington, IN: Indiana University Press, 1951), 105.
114. Edwin Adams Davis and John C. L. Andreassen, "Diary of William Newton Mercer," *Journal of Southern History*, 2 (1936).
115. New Orleans, LA, US Custom House Enrollment 57, 19 May 1818, National Archives.
116. *Liberty Hall and Cincinnati Gazette* (Cincinnati, OH), 23 September 1816; Thomas, *Travels in the Western Country*, the author "ascended to the deck" to see the confluence of the Ohio and Mississippi Rivers.
117. *Niles' Weekly Register*, X (20 July 1816), 348–349; Davis & Andreassen, "Diary," 394.
118. *Liberty Hall and Cincinnati Gazette*, 23 September 1816, Davis & Andreassen, "Diary," 392.
119. *Liberty Hall and Cincinnati Gazette*, 23 September 1816.
120. Newton, Nichols, and Sprankle, *History of the Pan-Handle*, 184; Fetherling, *Wheeling*, 32.
121. *Niles' Weekly Register*, X, 348–349.
122. Anon., "steamboats on the Western American Rivers," *Maine Engineering*, (October 1897), 31.
123. The pressure used in the *Washington's* boilers is nowhere cited, but authors agree that it operated at a high-pressure. Hunter, *Steamboats on the Western Rivers*, 127; Charles William Batchelor, *Incidents in my Life* (Pittsburgh: Joseph Eichbaum, 1887), 122.
124. William F. Switzler, "Report on the Internal Commerce of the United States" (House Executive Document 6, Fiftieth Congress, First Session, Serial Set 2552), 193.
125. *Ibid*, 193.
126. Pratt, *Birth of the Steamboat*, 61.
127. Pratt, *Birth of the Steamboat*, 65; Bennett Woolcraft, *a Sketch of the Origin and Progress of Steam Navigation from Authentic Documents* (London: 1848), 64–66.
128. *Ohio Federalist* (Clairsville, OH), 6 June 1816; *Niles' Weekly Register*, 348–349.
129. Davis and Andreassen, "Diary," 395.
130. *Ibid*.
131. *Ibid*.
132. Hunter, *Journal of Economic History*, 3 (1943), 220.





Return of the Wolf Packs:

The Battle for ON 113, 23–31 July 1942

ROBERT C. FISHER

During July 1942, U-Boat Command shifted its attention to the Allied transatlantic convoy routes which had been largely neglected since the autumn of 1941. After the entry of the United States into the war in December 1941, Germany exerted the main thrust of its submarine efforts in the coastal waters of the western hemisphere, where Allied shipping suffered heavy losses. The first battle of the new mid-ocean campaign, which would last until the defeat of the wolf packs in May 1943, occurred in late July 1942, when German U-boats intercepted the westbound convoy ON 113. The battle for ON 113 established the pattern for the months to come.

There is a large and growing body of historical literature on the Battle of the Atlantic. In addition to the official histories by Stephen Roskill and Samuel Morison, John Terraine's *The U-Boat Wars, 1916–1945* and Dan van der Vat's *The Atlantic Campaign* are good overviews of the submarine war. The best operational histories are Marc Milner's *North Atlantic Run* and its sequel *The U-Boat Hunters*. Several detailed operational studies have focused solely on the climax of the battle in 1943. These include Jürgen Rohwer's *The Critical Convoy Battles of March 1943*, Martin Middlebrook's *Convoy*, and David Syrett's *The Defeat of the German Wolf Packs*. The inshore campaign in North American waters in 1942 has also been the subject of a number of books, the best of which are Michael Gannon's *Operation Drumbeat* and Michael Hadley's *U-Boats Against Canada*.

However, the convoy battles of 1942 have not been well-served. Autobiographical accounts by participants, such as John M. Waters' *Bloody Winter* and Alan Easton's *50 North*, are exceptions, but are necessarily written from a largely personal perspective.¹

This article takes an important step towards redressing this imbalance by identifying and closely examining the convoy battle that initiated the second mid-ocean campaign in July 1942; a campaign which led ultimately to the defeat of the wolf packs in mid-1943. It makes a special effort to integrate Allied and German sources — especially U-boat war diaries — which has hitherto been attempted only by Jürgen Rohwer and W. A. B. Douglas.² Careful comparison of reports from all naval vessels that survived has enabled a much clearer understanding of what actually happened at sea. Thus, to some degree, this analysis penetrates the fog of war which surrounds most convoy battles. Knowing what happened also permits an accurate assessment to be made of the performance of staff officers ashore in their efforts to analyze events at sea. In the past, historians have often had to be content with quoting these all too fallible after action summaries as if their conclusions were etched in stone.

The U-boat invasion of American and Caribbean waters forced the dispersal of Allied escorts. During the spring of 1942, Allied authorities reduced the number of escort groups operating in the Mid-Ocean Escort Force (MOEF) from fourteen to eleven (six British, four Canadian,



HMCS *Dauphin*, flower-class corvette K-157. National Archives of Canada, Negative No. PA114536.

one American) to allow a transfer of escorts to the coastal waters of North America. One British and four American groups were withdrawn from the MOEF and replaced by only two British groups. The extension of the convoy system in the Caribbean in July necessitated additional reductions in North Atlantic escort strength. Instead of cutting the number of mid-ocean escort groups further to ten, the size of the groups was reduced to a minimum of six escorts on the premise that summer weather conditions would allow them to operate below strength. This move released ten Canadian corvettes for coastal escort duty.³

The coastal convoys introduced in the spring and summer of 1942 deprived Axis submarines of easy targets in the North American area. The extreme distance from the U-boat bases in France and the proximity of shore-based aircraft made Caribbean and American waters unsuitable for the use of wolf pack tactics against the new convoys. Large wolf packs could, however, still be employed successfully in the central North Atlantic in the air cover gap between Iceland and

Newfoundland. The short distances from their Biscay bases to the mid-ocean allowed the U-boats to mass for sustained operations. Admiral Karl Dönitz, Commander-in-Chief, U-boats, later recalled the decision made in July 1942:

*"The main weight of our attack in the war on shipping had now to be transferred back to operations against convoys to and from Britain, in mid-Atlantic, where they were beyond the range of land-based air cover."*⁴

The acute shortage of escorts compelled Allied convoys to use the most direct route between North America and Great Britain. The forced adherence to the great-circle path limited Allied opportunities for the evasive routing of convoys, making them easier to intercept by the Germans. As it was, the 1,750 mile run between Newfoundland and Northern Ireland tested the fuel endurance of destroyers and corvettes. To compound these difficulties, the introduction of a new cipher for Atlantic U-boats in February



German U-boat. Canadian Forces Photographic Unit, Negative No. 85-1483.

had interrupted the flow of Allied special intelligence.

The Admiralty Submarine Tracking Room (the US Navy's tracking room, OP-20-G, was just organizing at this stage), under the direction of Commander Rodger Winn, RNVR, was still able to maintain a general estimate of U-boat deployments, largely through High Frequency/Direction Finding (HF/DF). The picture, however, was increasingly hazy. The Tracking Room's report of the week ending 20 July, for example, placed twenty U-boats west of 30° West. In fact, fifteen to eighteen submarines lurked in this zone. In spite of the Admiralty's reasonably accurate estimation, the absence of precise daily fixes for individual U-boats and the limited fuel endurance of escort groups left routing authorities with little choice but to continue to route convoys through this area of heavy enemy concentration.⁵

By contrast, *B-dienst*, the German naval intelligence branch, was providing U-Boat Command with timely and accurate radio intercepts. German decrypts of Allied naval signals

revealed that North Atlantic "convoys on the whole still seemed to follow the great circle-path." Dönitz formed Group *Wolf* in early July to herald the return of the wolf packs to the vital shipping lanes between North America and Great Britain. Initially, *Wolf* consisted of seven U-boats: *U-71*, *U-86*, *U-90*, *U-379*, *U-552*, *U-559*, and *U-704*. Two additional boats, *U-43* and *U-454*, were assigned to the group the following day, bringing its strength up to nine. Several of these submarines were on their first war cruise, but the pack also included seasoned veterans (*U-43*, *U-71*, *U-552*), each with seven or more patrols under their belts. In addition, the group boasted a bona fide ace in *Korvettenkapitän* Erich Topp, who had already sunk thirty-two Allied ships, including the destroyer USS *Reuben James*.⁶

Group *Wolf* formed a reconnaissance line on 9 July in the eastern Atlantic at the outer limits of air cover. The pack received orders to sweep westward along the great-circle route in search of convoys. If none were found, the boats would operate independently off the coast of the United



181 HMS *St. Croix*, town-class destroyer (formerly USS *McCook*). National Archives of Canada, Negative No. PA104469.

States and in the Caribbean Sea. Almost immediately *U-90* glimpsed an eastbound convoy during the night of 9/10 July. *U-90* reported five merchant ships, two light cruisers, and eight destroyers at a speed of 14–16 knots — the American troop convoy AT 17. Dönitz ordered only two of the other U-boats, *U-704* and *U-597*, to operate against AT 17 because its high speed made pursuit futile for the more distant boats. In desperation, *U-90* fired a spread of four torpedoes but missed “owing to excessive distance.” After a few hours, Dönitz abandoned the hunt.⁷

Group *Wolf* beat across empty seas until 13 July, when *U-71* (*Oberleutnant* Hardo Rodler von Roithberg) sighted ON 111, a fast westbound convoy under the protection of Escort Group B6. Roithberg reported that the convoy was on a northerly course. U-Boat Command surmised from his signal that it was an eastbound convoy and instructed Group *Wolf* to operate accordingly. Several hours later, *U-71* radioed that the convoy was, in fact, westbound; by this time, Dönitz did not want the pack to waste fuel in a high speed chase that held little prospect of

success in rough weather. Meanwhile, *U-552* (*Korvettenkapitän* Erich Topp) had also sighted ON 111, but sweeps by the escorts forced both this boat and *U-71* to lose contact.⁸

The brief pursuit of ON 111 revealed the presence of Group *Wolf* to the Allies through HF/DF bearings. Commander Rodger Winn thought the enemy submarines were shadowing the eastbound HX 197, which, as a result, received several U-boat warnings. Western Approaches diverted ON 111 to avoid the U-boats presumed to be around HX 197, which helped shake *U-71* and *U-552* off their trail. Winn misinterpreted the HF/DF evidence as indicative of U-boats “outward bound from Germany to American waters” and not the presence of a new reconnaissance line. Thus, Allied routing authorities remained unaware that a wolf pack lurked in the midst of the convoy lanes.⁹

Another three days of empty seas followed for Group *Wolf* until 16 July, when Dönitz realigned the patrol line to lie “in wait for an incoming convoy” reported by *B-dienst*. This was either SC 91 or HX 198, both eastbound

convoys, which were southwest of the pack. Heavy fog shielded the merchant ships from enemy eyes. For three days, the patrol line hunted northeast and then southwest in vain as both convoys slipped through unseen. Dönitz reflected that the “operations of Group *Wolf* are heavily dependent on [the] weather situation (continuous bad visibility)” and concluded “that had the weather been more favourable, the group would have found targets for attack.”¹⁰

U-Boat Command intended to refuel the boats from a supply submarine, or “milch cow,” and deploy them in the Caribbean Sea if no traffic presented itself and the poor weather persisted. On 19 July, however, *B-dienst* decrypted a signal giving the position, course, and speed of ONS 112. The slow westbound convoy was in position 55°01' North, 29°33' West that morning. Dönitz directed Group *Wolf* to form a new patrol line in order to make the interception the following morning. Thick fog again intervened. Topp broke radio silence on 20 July and again on 21 July to report: “No engagement of enemy possible because of poor visibility.”¹¹ HMS *Primrose*, the Senior Officer of Escort Group C1, the mid-ocean escort of ONS 112, similarly observed that “the voyage was remarkable for the amount of fog experienced.”

The escort was blissfully unaware of the convoy's peril due to Allied intelligence's failure to detect the presence of the pack. Shore authorities issued no U-boat warnings to *Primrose* for the period of 19–22 July, when *Wolf* was searching for ONS 112.¹²

Group *Wolf* swept westward, but by 21 July, U-Boat Command concluded that ONS 112 had evaded the patrol line and made arrangements for the pack to refuel. The *B-dienst* then reported an eastbound convoy, probably SC 92, before refueling could be carried out, and Dönitz instructed *Wolf* to form a new patrol line in order to intercept SC 92 after dawn on 23 July.¹³ Even though the fog had cleared, the slow convoy slipped past to the north of the pack, unseen. Over 100 miles to the south, *U-379* and *U-552* instead made contact with a westbound convoy.¹⁴

They had found ON 113, south of Greenland, still some 600 miles from Newfoundland. It had been routed south of SC 92, but the strict adherence of Allied convoys to the narrow band of the great-circle path allowed the pack to stumble upon the fast westbound convoy.

Subsequent histories have emphasized inaccurately that decrypts made possible the German interception of ON 113. The Admiralty narrative *The U-Boat War in the Atlantic* suggests that enemy “Radio Intelligence discovered the position of the westbound convoy, and consequently a patrol line was formed which led to the sighting of ON 113,” but there is no mention of such a decrypt in the German sources. The pack was, in fact, searching for the eastbound SC 92 when it intercepted the westbound ON 113 by coincidence.¹⁵

The convoy sailed from Great Britain on 18 July with thirty-four merchant ships. One straggled and returned to the port, leaving thirty-three for the ocean passage. Most of them were sailing in ballast, bound for New York. The mid-ocean escort of ON 113, Escort Group C2, consisted of two town-class destroyers (ex-USN four stackers), one British and one Canadian, HMS *Burnham* and HMCS *St. Croix*, and four flower-class corvettes, three Canadian, HMCS *Brandon*, *Drumheller*, *Dauphin*, and one British, HMS *Polyanthus*. Commander Thomas Taylor, RN, captain of *Burnham*, was Senior Officer of the group. The escorts had not worked together before: the two British warships joined C2 for ON 113, and it was only *Dauphin*'s second voyage with the group. None of them possessed shipborne HF/DF, but the two British escorts were equipped with the new type 271 centimetric radar. The Canadian escorts had radar types which were much less effective at detecting surfaced U-boats.

The first few days of the voyage were uneventful, except for delays which prevented HMCS *St. Croix* and *Drumheller* from joining until 22 and 23 July. Two days earlier, the convoy had crossed the CHOP line, where it passed from British to American control, exercised by the United States Navy's Convoy and Routing

Section (CONNAV) in Washington.¹⁶

The fog lifted on 23 July, and *U-552* glimpsed the mast of a corvette at 1608 hours (all times Greenwich Mean Time), perhaps that of the rejoining *Drumheller*. Two hours later, Topp sighted smoke from the convoy. Within minutes of *U-552*'s first sighting report at 1906 hours, U-Boat Command received word that *U-379* and *U-90* had made contact. *U-597* came up to the convoy two hours later.¹⁷ Naval Service Headquarters in Ottawa (NSHQ) obtained a DF bearing on one of the first two sighting reports and relayed it to the Admiralty, which warned ON 113 at 2051 hours that a U-boat was in contact.¹⁸

The escort's first hint that it had company had come twenty minutes earlier, when *Burnham* sighted and chased a submarine to the northwest. Gunfire forced the U-boat to submerge at 2132 hours at a range of seven miles, and the destroyer picked up a sonar echo briefly. *St. Croix* joined in the hunt, but to no avail. Topp "was forced away by a screening vessel for a short period" at the same time, but did not observe gunfire. Defects in *U-552*'s port engine limited her surface speed to ten knots, but funnel smoke allowed Topp to reestablish contact.

Shortly before dusk, *St. Croix* (Lieutenant-Commander Andrew H. Dobson, RCNR) glimpsed *U-597* on the surface and gave chase at 26 knots. The destroyer opened fire, but the shells fell "fairly wide of the mark." *Kapitänleutnant* Eberhard Bopst crash dived at 2337 hours, when the range had closed to 3,000 yards. Dobson failed to make sonar contact, but dropped a pattern of depth charges for good measure. *Burnham* joined the search, and both destroyers obtained contacts at 0020, but lost them by crossing paths. Bopst reported a destroyer directly overhead but no further attacks. The two destroyers abandoned the search after an hour without finding further trace of *U-597*.¹⁹

Taylor had ordered a course alteration of 60° to port at 2130, for three hours, and then 30° to starboard to steer a new course at 225° for the duration of the night.²⁰ The evasive turns, before and after nightfall, threw the pack off the con-

voy's scent. Topp reported that he lost contact at twilight, and the other shadowers also "had been forced off." The night passed quietly for the convoy. The two destroyers, *Burnham* and *St. Croix*, rejoined in the morning at which time Taylor stationed *St. Croix* at the range of maximum visibility ahead of the convoy. Corvettes were also stationed at the same distance on either beam for daylight hours.

After he lost contact, Topp guessed that ON 113 had altered to the south. Dönitz ordered the pack to form a new patrol line to the west, but Topp, convinced that he would soon make contact, ignored the signal and continued south. His hunch was rewarded; he sighted the convoy shortly after daybreak in "very good visibility."²¹ The Admiralty intercepted *U-552*'s sighting report at 0908 and warned the escort.²²

Throughout the morning and afternoon of 24 July, Topp shadowed ON 113 from astern, which he believed was the position safest from surprise by the escort. The merchant ships eased the task of shadowing by smoking heavily; in particular, *SS Senga* belched "thick black smoke continuously." One after the other, five more submarines, *U-71*, *U-86*, *U-454*, *U-704*, and *U-90*, made contact. During the afternoon Dönitz urged the pack: "Attack takes precedence over anything else. Aim to attack by day as well. Prospects for success in daylight attacks are very good, as the protective screen has been deployed as an outer screen detached from the convoy." The clear visibility obviously had enabled the shadowers to reconnoiter ON 113 thoroughly.²³

Good visibility could also work against the pack. *St. Croix*'s masthead lookout sighted two U-boats at 1735 hours, ahead of the convoy on either bow. *St. Croix* increased to 28 knots and chased the closest one, *U-90*, only five miles away. *Burnham* went in pursuit of the other, more distant submarine, which escaped further detection (and subsequent identification by the historian). With enough daylight left to overtake *U-90*, Dobson withheld fire in an effort to keep her on the surface until the range closed as much as possible, and in order to improve the odds of

underwater detection. *Kapitänleutnant* Hans-Jürgen Oldörp obliged for an hour by attempting to outrun the destroyer on the surface. He finally submerged when the range had fallen to six thousand yards.²⁴

Sonar conditions were good in the calm sea running. Dobson proceeded to the diving position where a brief search produced a sonar echo at a range of 2,400 yards. *St. Croix* classified it as a submarine at 1856 hours and ran in to attack. The contact was lost at 700 yards, revealing that *U-90* had gone very deep. The depth charge crew changed to a deep setting during the run-in and fired a pattern of six depth charges. Dobson circled back and reestablished contact. This time, the echo, showing no movement, was lost at 500 yards. Six depth charges set to 150 and 350 feet were dropped at 1909 hours. After the explosions, "small pieces of splintered wood, bubbles of air," and oil rose to the surface in the destroyer's wake.²⁵

Dobson opened up the range to 2,200 yards, regained contact, and ran in to attack. During the approach run, the target showed no movement and "was held until close in" until finally lost at 100 yards. At 1992 hours, *St. Croix* fired a pattern of six depth charges set shallow to 100 feet. The third and final depth charge attack brought scattered debris and human remains to the surface, marking the destruction of *U-90*. Shortly afterwards, *Burnham* arrived from her unsuccessful search for the other U-boat to screen *St. Croix* while she collected the grim evidence of her kill as proof for the skeptical Admiralty assessment committee. The two destroyers remained in the vicinity of the wreckage of *U-90* until 2040 hours, then sailed to rejoin their flock. Shortly after sunset, Taylor sighted a submarine on the surface at a range of five miles. The U-boat crash dived. *Burnham* and *St. Croix* swept the area for over an hour without result.²⁶

In the meantime, six submarines still shadowed ON 113. After the initial sighting by *St. Croix*, Taylor instructed the commodore to alter course to due north for three hours and then back to the west.²⁷ Evasive action did not

fool the pursuers. Topp assumed the convoy would turn south, but quickly learned his error. Smoke guided him back to ON 113, and at 2157, he reported it on a northerly course. Against a bright horizon, he observed five other U-boats in pursuit. The weather deteriorated at dusk with thunder storms, heavy rain, and poor visibility.²⁸ In his absence, Taylor had left *Drumheller* in command of the escort. Commander George H. Griffiths, RCN, ordered night stations: *Drumheller* and *Dauphin* on the starboard bow and quarter, and *Polyanthus* and *Brandon* on the port bow and quarter. Unknown to Griffiths, two merchant ships, SS *Harpeffell* and *Stancleeve*, straggled in the worsening weather.²⁹

The growth of the pack was watched with grave concern by Allied shore authorities. While ON 113 steered the northerly course ordered by Taylor, CONNAV radioed a diversion to due south for twelve hours after dusk to shake off the U-boats. Griffiths passed the signal to the convoy commodore and reminded him that if it was obeyed, the convoy would retrace its steps to the scene of the earlier U-boat sightings. Commodore Roy Gill, RNR, aboard SS *Empire Rowan*, recommended instead a course alteration to the east after dusk and then, after midnight, to comply with CONNAV's diversion to the south. Griffiths agreed and informed *Burnham*. The immediate impact of this radical evasive maneuver, which later caused much controversy, was that a westbound convoy sailed due east for several hours.³⁰

The unexpected diversions to the east and south, combined with heavy seas, gusts of rain, and deteriorating visibility threw most of the pack off the convoy's scent. The tenacious Topp held contact, following the "large circling movement over 360 degrees." Running blind through the pouring rain, *U-552* penetrated the reduced screen through the gap in the stern and maneuvered in between the two starboard columns. At 0150, Topp fired a double salvo at the rear ship in the ninth column. SS *British Merit*, an 8,093-ton tanker, was fitted with anti-torpedo net defenses which stopped one torpedo but not the other; this second torpedo struck the port quarter

just behind the nets. The explosion killed one man and seriously injured another, who was pulled from the flooded engine room to safety by the Chief Engineer.

The tanker fired two white rockets and made a distress call that was intercepted clearly by U-552. Griffiths ordered the escort to perform Operation Raspberry, a maneuver in which the escorts steamed pre-arranged patterns while firing illuminants in an effort to locate the attacker on the surface outside of the convoy. In his log, Erich Topp described what followed:

*The convoy comes to life. Gunfire flashes out. Star shells flare luridly in the hazy, rain-saturated air in all sectors astern. But no one suspects that we're right here in the middle of them.*³¹

While the corvettes hunted in the distance, U-552 turned and pushed up between the sixth and seventh columns. (The stern ship in the eighth column had straggled a few hours earlier.) Topp maneuvered to launch stern and bow attacks against the rear ships of both columns. At 0121, he torpedoed the 5,136-ton SS *Broompark* on the port side, amidships in her stokehold. The impact killed two men. Topp then ordered his crew to reload the bow tubes while preparing to fire a stern shot at the tanker in the sixth column. SS *Solsten*, however, disrupted the attack with accurate gunfire which forced "a sharp blast of air" in the faces of the sub's bridge crew. U-552 crash dived immediately. The gunfire alerted Lieutenant John C. Littler, RCNR, captain of *Brandon*, astern of the convoy. Littler was uncertain if the shells were meant for him or for a U-boat, but he gave *Solsten* "the benefit of the doubt" and fired starshell. The fireworks were too late to catch U-552 before she slipped below the surface, and sonar failed to locate the enemy.³²

The victims remained afloat, but the crews abandoned ship quickly. *Brandon*'s starshell guided the two destroyers back to the scene of the attack. *St. Croix* steamed ahead to the con-

voy, but *Burnham* remained behind until *Polyanthus* dropped back to screen the rescue work. *Brandon* picked up forty-six survivors out of *Broompark*'s crew of forty-nine in "seas of considerable height." The ship's captain drowned, being unable to reach one of the lifeboats or rafts, but all of the other men who survived the torpedoing were rescued. Littler then went to attend to the *British Merit* and picked up thirty-two men from two lifeboats. The other twenty-two survivors had remained on board the tanker, which seemed "perfectly seaworthy" although it was unable to raise steam.

Taylor ordered the two corvettes to stand by the derelicts to determine if they were salvageable, and for one of the corvettes to rejoin if possible. Low on fuel, *Brandon* later had to detach with the survivors for base while *Polyanthus* waited for the tugs to arrive. *British Merit* subsequently made port under tow of the USS naval tug *Frisky*, but *Broompark*, which had survived a previous torpedoing in 1940, sank when just 27 miles from St. John's, Newfoundland.³³

In the meantime, U-552 surfaced after the attack and reestablished contact when a "destroyer coming up from astern" at 0630 forced the boat under. Kapitänleutnant Walter Schug, captain of U-86, sighted a destroyer at 0857 hours (perhaps *Burnham* returning from astern) and submerged to 130 meters. When it was clear above, Schug surfaced and went in pursuit. Dönitz, uncertain of the pack's prospects, discussed the situation in the morning with Topp by means of a radio cipher conversation. The U-boat commander emphasized that the "strong protective screen" and "suddenly arising storm" had thwarted *Wolf*'s attempts to attack ON 113. He attributed the failure to maintain contact to the convoy's extreme course alterations. Topp assessed the odds of reestablishing contact as "exceedingly slight," but guessed that ON 113 had altered course to southwest at dawn.³⁴

The convoy altered course from 180° to 253° at 1100 when *Burnham* rejoined. Shortly

afterwards, the Admiralty obtained a DF bearing on a signal from *U-86* and warned C2.³⁵ ON 113 was now within range of the Newfoundland-based aircraft of the Royal Canadian Air Force (RCAF). During the morning and afternoon of 25 July, a Catalina flying boat of 116 Squadron and two Digby aircraft of 10 Squadron provided air escort. None of them found the convoy because of "heavy fog" and inaccurate position reports. Still, at 1413 hours, the Catalina surprised *U-597*, which crash dived immediately; the air crew did not sight the U-boat.³⁶

In variable visibility, *U-86* ran "into the rearward column of the convoy" at 1535 hours and identified a destroyer, a corvette, and five merchant ships. Schug dropped back to shadow from a comfortable distance and radioed contact to U-Boat Command. Group *Wolf* slowly closed in around ON 113: *U-43* glimpsed one of the two destroyers at 1823 hours, and within an hour, *U-454* and *U-704* also made contact.³⁷ Another Digby furnished air cover in the evening and located the convoy at 1837 hours with the help of radar. The aircraft did not make any sightings, nor did it disturb the pack. COMINCH warned Taylor an hour later that U-boats still shadowed the convoy.³⁸

The escorts unwittingly pushed *U-43* off three times, but *Oberleutnant* Hans-Joachim Schwantke repeatedly reestablished contact. To home the other boats, at 1950 Schwantke made medium frequency (MF) homing signals which were intercepted by the convoy's MF/DF guard, bearing 170°. Ten minutes later, a sudden improvement in visibility allowed *St. Croix* to sight *U-43* bearing 175°, five miles distant. *U-454*, which was nearby, submerged immediately, but Schwantke tried to outrun the destroyer on the surface at full speed. Dobson gave chase. After the range had closed to two thousand yards at 2034, *U-43* crash dived. *St. Croix* obtained a good sonar echo and fired a pattern of depth charges on the target. Schwantke went deep, to 110 meters, where the explosions crushed the boat's main blow-out pipe. Dobson failed to regain contact, and *Burnham* joined to assist in a box sweep, but *U-43* eluded them.

Schwantke surfaced at 2159 hours, observed one of the four-stackers 6,000 meters away, and descended to periscope depth. As the escort closed to three thousand meters, he went deep to 120 meters. The destroyers did not regain contact, and *U-43* later resurfaced to move off and make repairs.³⁹

The sweeps of the escorts also pushed *U-704* away, but *U-86* continued to shadow during the hunt for *U-43*. Schug was joined in the meantime by *U-597* and *U-607*; the latter was an outbound boat which reinforced Group *Wolf*. Both *U-597* and *U-607* submerged ahead of the convoy to launch attacks before nightfall. The absence of the two destroyers left only *Drumheller* and *Dauphin* to screen the convoy.

Through the periscope of *U-597*, Bopst counted twelve to fourteen merchant ships in the distance and a lone corvette in station on the starboard side. The convoy made a sudden course alteration to port at 2140, which knocked *U-597* out of position, ruining the attack. Next, *Kapitänleutnant* Ernst Mengersen, veteran captain of *U-607*, closed in at periscope depth in the "advancing twilight." Steep seas and rain showers complicated his approach. When the hydrophones showed that he was in the midst of the convoy, mist covered the periscope and made an attack impossible. The sound of screws approaching persuaded Mengersen to withdraw.⁴⁰

Taylor abandoned the hunt for *U-43* because he "considered it essential to be with the convoy at night." *Burnham* encountered the neutral SS *Irish Plane* while returning to the convoy. The Irish vessel was also sighted by *U-454*, which mistakenly chased her to the east for several hours and was drawn away from the real prey. The two destroyers rejoined at 2330, shortly after dusk. Fifteen minutes later, ON 113 altered 40° to starboard to a new course of 283°. Taylor ordered new night stations: *St. Croix* and *Burnham* the port and starboard bows, and *Drumheller* and *Dauphin* on the port and starboard quarters.

The night was moonlit and bright.⁴¹ COMINCH warned Taylor at 0048 that a U-boat had

made a sighting report in his vicinity.⁴² The sweeps of the two starboard escorts pushed *U-86* off at 0100, almost breaking enemy contact. At the same time, *U-607* surfaced and reestablished contact in the bright moonlight. *U-379* and *U-71* followed suit within the next hour.⁴³ Allied shore authorities obtained DF bearings at 0122 and 0228 hours, the latter on *U-71*'s sighting report, and warned the escort.⁴⁴

Taylor ordered an evasive turn of 40° to port at 0245 to shake off the shadowers, who stubbornly held contact in the clear visibility. The bright moonlight also worked against the U-boats by making it too light for them to get close on the surface but too dark for a periscope attack. In these conditions, the escort frustrated the pack's efforts to penetrate the screen. C2 escorts forced *U-71* off three times while closing to attack. The stern escorts drove *U-607* back when Mengersen tried to push forward. Towards the middle of the night, cloud cover darkened the sky and visibility fell to two or three miles.

Astern, Mengersen drove across the darker, northern side of the convoy at three-quarter speed. The "turning around and running back" of *Dauphin* forced *U-607* wide around the starboard quarter. Mengersen overtook *U-71* at 0450 hours and pushed forward at full power along the northern side of ON 113. When *U-607* "had caught up to the destroyer" on the starboard bow, he "turned sharply inward in order to make contact with the convoy once more."⁴⁵

Dark and cloud covered, the night augured well for attack. *U-607* slipped through the large gap in the screen between *Dauphin* and *Burnham* at 0530 and observed the three ships in the starboard column. At the same time, *U-704* stumbled on to the convoy from ahead. As Mengersen approached to attack, fog descended and reduced visibility to less than one mile. At 0557 hours, he fired a spread of four torpedoes from 1,500 meters at the lead ship and, after turning away, attempted a stern shot at the second ship but misfired. Two torpedoes struck the 6,942-ton SS *Empire Rainbow* amidships on the starboard side. Sixty seconds later, Mengersen observed a third deto-

nation against another ship (which has not been identified). Taylor heard the initial explosion and ordered Operation Raspberry, which, however, proved ineffective because the starshell was obscured by the fog. *Dauphin* came "very close" to *U-607* without sighting the U-boat which, remaining on the surface, eluded the corvette and disappeared in the fog to the north.⁴⁶

While *U-607* escaped, *U-704*'s hydrophones revealed the convoy "directly ahead." The bridge crew observed smoke from ON 113, which slowly came into view. The fireworks startled *Kapitänleutnant* Horst Kessler, but he realized they were meant for another U-boat. At 0611, he fired a spread of four torpedoes at a large freighter from a range of two thousand meters. Turning hard to starboard, Kessler heard four detonations and observed his victim "dead in the water." Mengersen also heard the hits as he crept away to the north. No other merchant ships were torpedoed, however, and it is possible that they were end-of-run detonations which appeared to be on the vessel already hit by *U-607*. Kessler crash dived to 150 meters at 0623 hours with dawn breaking.⁴⁷

Dauphin(Lieutenant Robert A. S. MacNeil, RCNR)⁴⁸ and *Burnham* set about rescuing the survivors. Between them, they picked up the entire crew of the *Empire Rainbow*. Kessler rose to periscope depth at 0715 to have a look around and glimpsed an escort only one thousand meters away. He hurriedly went deep to 160 meters; however, *Dauphin* and *Burnham* made sonar contact and broke off the rescue work. Four well-placed depth charges exploded around *U-704*, damaging the lighting circuits and cracking the diesel exhaust flaps. The submarine plunged to 192 meters with the flange of torpedo tube III "leaking badly." Kessler stabilized his boat with water "beginning to rise above the floor plates" and ejected a *Bold* sonar decoy.

Two more patterns of depth charges cascaded down at 0740 and 0804 hours which were farther off, though still "quite impressive" to the submariners. The batteries and oxygen supply were running low as *U-704* crept clear of the scene.

Taylor and MacNeil fired their final pattern at 0823 hours which fell far from the mark. *Dauphin* and *Burnham* then turned their attention back to the *Empire Rainbow*. The abandoned vessel appeared salvageable, so Taylor left MacNeil to reboard the crew and bring her into port while *Burnham* rejoined the convoy. *Dauphin* and *Empire Rainbow* finally got under way at 1240.⁴⁹

In the meantime, the “thick damp fog” that had concealed Mengersen’s escape after the torpedoing of *Empire Rainbow* now worked against the pack. *U-71* reestablished contact with ON 113 in a brief clearing at 0630 hours, but visibility soon closed down again to 200 meters. *U-552* and *U-597* glimpsed the convoy an hour later, but could not maintain firm contact. The fog lifted again at 0915 hours, allowing *U-71* to observe “heavy smoke” and an escort which rapidly disappeared into a “thick wall of fog.” *U-607* fled from a destroyer which suddenly appeared out of the mist. The U-boats had little hope of reestablishing contact in these conditions.⁵⁰

The escort had other problems. Weather again prevented effective air cover from being furnished, although ON 113 was well within the range of Newfoundland-based aircraft. *Burnham* detached for St. John’s in the morning because of fuel shortage, leaving only a destroyer and a corvette to screen the convoy. Griffiths, captain of the HMCS *Drumheller*, took charge after Taylor’s departure.⁵¹

During the afternoon of 26 July, three U-boats stumbled upon *Dauphin* and *Empire Rainbow* making their way to St. John’s in the poor visibility, *U-552*, *U-597*, and *U-704* at first thought they had found the convoy. Topp gradually realized that he was shadowing “a steamer protected by a corvette” and “apparently damaged or torpedoed.” Thick fog descended shortly after 1600, causing all three submarines to lose contact. The two ships continued to plod toward port until 2150 hours, at which time *Empire Rainbow* began to sink quickly. MacNeil removed the crew and began shelling her to speed her descent. Topp heard the gunfire in the fog

and cautiously approached. The derelict sank at 2305 hours. *U-552* moved in at full speed to attack, but the corvette suddenly vanished in the fog.⁵²

The main body of the convoy was not troubled further during the day. HMCS *Annapolis*, another town-class destroyer, reinforced C2 from St. John’s in the afternoon. The western local escort, two destroyers, HMCS *Walker* (Commander James M. Rowland, RN) and HMCS *Columbia*, and two corvettes, HMCS *Chicoutimi* and *Calgary*, rendezvoused with ON 113 in the evening. They brought the strength of the combined escort up to four destroyers and three corvettes. CONNAV ordered a diversion to starboard to avoid a U-boat ahead of the convoy, but “thick fog” prevented compliance with the order until 2300 hours when a “very slight improvement in visibility” occurred. *St. Croix* chased a radar contact at 2315 hours, but German records suggest that U-boats no longer shadowed ON 113.

During the night of 26/27 July, Group *Wolf* found no trace of the convoy’s scent. Dönitz terminated the operation on the following morning and recalled Group *Wolf* for refueling. Poor visibility ultimately prevented the pack from reestablishing contact on 26/27 July, although the break-up of the convoy and escorts into separate groups after the final attack led some of the boats astray.⁵³

Nevertheless, the enemy delivered another blow against ON 113. *St. Croix*, *Drumheller*, and *Annapolis* detached on 27 July, leaving the four western local escorts to screen the convoy while it continued along the southern coasts of Newfoundland and Nova Scotia toward Boston. The passage was uneventful until 29 July, when COMINCH obtained DF bearings at 1401 and 1753 hours and warned HMS *Walker*. Commander James M. Rowland, RN, ordered HMCS *Columbia* to sweep astern to force off the shadowers. A Hudson bomber arrived from 11 Squadron, RCAF, Dartmouth, but enemy submarines had not yet made contact.⁵⁴

Later that day, at 2215, *U-132* sighted ON 113 southwest of Sable Island and submerged

ahead to await its approach. As the convoy drew near, *Kapitänleutnant* Ernst Vogelsang rose to periscope depth and, from a range of 800 meters, torpedoed the lead ship in the fourth column, the 6,743-ton SS *Pacific Pioneer*. Vogelsang immediately "dived to avoid an oncoming vessel," but then could not stop his boat from plunging uncontrollably to the bottom in eighty meters of water.⁵⁵

The four escorts searched for the attacker without luck. *Chicoutimi* picked up a non-sub echo and dropped a pattern of depth charges for good measure, but none of the group obtained a firm contact. Rowland instructed *Calgary*, whose sonar had broken down, to rescue the survivors of the *Pacific Pioneer*; she retrieved the entire crew. *Chicoutimi* returned to the convoy, leaving the two destroyers to continue the hunt. They failed to find any trace of *U-132*, even though *Columbia* searched the area until morning. Four hours after his initial attack, Vogelsang lifted his boat free from the ocean floor, rose to periscope depth, and crept away from the lone destroyer in the distance.⁵⁶

Dönitz instructed *U-132*, having fired its last torpedo, to locate and shadow the convoy. In an unusual attempt to use wolf pack tactics in coastal waters, he formed three independent U-boats, *U-89*, *U-458*, and *U-745*, off Nova Scotia, into a makeshift pack to hunt for ON 113 based on the assumption that it was headed for Boston. During the morning of 30 July, *Calgary* and *Columbia* put into Halifax to disembark the survivors and refuel. They were replaced by the minesweeper HMCS *Quinte*.⁵⁷ *U-458* glimpsed two escorts, but found no trace of ON 113 in poor visibility. An 11 Squadron Hudson sighted *U-89* on the surface at 1944, twenty miles on the convoy's port beam. The aircraft attacked the U-boat as it crash dived in the pouring rain with four depth charges, but it failed to inflict serious damage. The attack kept *U-89* submerged for three hours while the convoy took evasive action.⁵⁸

During the night of 30/31 July, the small wolf pack failed to make an interception, but

Dönitz continued the hunt in the morning. Naval Service Headquarters in Ottawa obtained a DF bearing on a signal made by *U-754* while searching for ON 113 and passed it to the Royal Canadian Air Force. Squadron Leader N. E. Small's Hudson aircraft of 113 Squadron took off from Yarmouth and, at 1450, surprised the U-boat on the surface. Small executed a swift and accurate depth charge attack which produced large air bubbles on the surface for an hour "until a heavy underwater explosion brought a large quantity of oil swirling up to mark the grave of *U-754*." The RCAF had scored its first U-boat kill of the war.⁵⁹

Strong air cover frustrated the remaining submarines during the afternoon and evening. By the time the submarines were ordered to break off the operation after midnight, ON 113 had already dispersed off Cape Cod without suffering further losses.⁶⁰

The balance sheet of ON 113 showed three merchant ships sunk and damaged in exchange for two U-boats destroyed. The human cost to the Allies was light, only four fatal casualties out of some 200 merchant sailors aboard the four torpedoed ships. The Germans lost two full U-boat crews totaling about 100 men. In total, fourteen submarines had operated against the convoy: the ten of Group *Wolf* and the four independents off Nova Scotia. The meager results achieved by *Wolf* against ON 113 disappointed the Germans.

With four submarines in contact during the night of 23/24 July, six the following night, and eight the third night, U-Boat Command could have expected ON 113 to pay a much heavier price than just three torpedoed merchant ships. Dönitz attributed the pack's lack of success primarily to the unfavorable weather and the "movements of the strongly escorted convoy." The unexpected course alterations made by ON 113 confused the shadowing U-boats and frequently disrupted contact. Evasive turns at nightfall were particularly effective in shaking off the pack. Ernst Mengersen, captain of *U-607* commented that the defense of ON 113 exhibited "a clever exploitation of these critical moments

[at dusk] by the convoy commander, taking route and time into account, to an extent which has never been observed up to now.”⁶¹

The weather was also unquestionably an important factor. Poor visibility and heavy seas frustrated German attempts to maintain visual contact with ON 113. In spite of these conditions, all ten U-boats of Group *Wolf* made contact with ON 113, five of which managed to reach firing positions. Nevertheless, only the two most experienced commanders, Mengersen and Topp, scored hits. Five of the pack’s ten captains were making their first war cruises in command, a ratio that would continue as increasing numbers of new construction U-boats became operational. Dönitz observed:

*“The carrying out of convoy operations without the help of inexperienced boats is unavoidable. We cannot alter the fact that the difficult school of convoy attack cannot be completed at home, but first of all when in direct contact with the enemy.”*⁶²

In spite of the failure of Group *Wolf* to achieve greater success against ON 113, the operation whet U-Boat Command’s appetite for convoy battles. Dönitz decided that, after refueling, the *Wolf* boats would remain in the North Atlantic to conduct further convoy operations instead of proceeding to coastal waters as originally intended. Once replenished, the pack was reconstituted first as Group *Pirat* and then as Group *Steinbrink* for operations against ON 115 and SC 94 in early August. The battle for ON 113 marked the renewal of the mid-ocean campaign which raged until May, 1943. “This resumption of North Atlantic operations without previous approval by the Naval Staff caused some feelings among the latter” which, however, made no move to halt the new U-boat offensive.⁶³

The renewal of convoy battles in the North Atlantic also captured the attention of Western Approaches in Liverpool, which was disturbed by the extreme course alterations necessary to

shake off the U-boats. Canadian and British naval officers charged with the defense of ON 113 emphasized in their reports the confusion caused by diversion ordered by CONNAV on 24 July. Taylor argued that when a convoy was being shadowed, the Senior Officer “is in a better position to suggest evasive maneuvers to [the] Commodore, than the shore authorities, whose information cannot be up to the last minute.” Griffiths, who served briefly as escort commander in *Burnham*’s absence, seconded Taylor’s recommendation: “When convoy is in contact with submarines, it is considered that the S. O. of escort is in the best position to judge what alterations of course should be made.”⁶⁴

These reports aroused heated discussion among the staff at Western Approaches. Commander R. D. S. Crosse, RN, Staff Officer (Convoys and Submarine Tracking), observed that they showed “the futility of shore authorities attempting to specifically control the course of a convoy after an attack.” Captain R. W. Ravenhill, RN, Deputy Chief of Staff, Western Approaches, reflected that the incident showed “the need for a full analysis being carried out by someone competent to assess the correctness or otherwise of the action taken. It seems to be most desirable that in cases where the convoy had a ‘stormy’ passage the whole proceedings of the voyage should be thoroughly gone into in order to correct mistakes.”

The staffs at Liverpool and Londonderry already attempted this, but did not have the time for thorough analysis. Ravenhill recommended that a staff officer be appointed for the sole purpose of evaluating convoy battles. Perhaps aware that a turning point had been reached in the Atlantic, he concluded: “We are supposed to be the highest authority in S/M warfare & we dictate policy but we do not analyze results.... I think we are definitely missing something by not carrying out this procedure.”⁶⁵

Crosse tried to fill the gap by drafting a report for Sir Percy Noble, Commander-in-Chief, Western Approaches, about the objections to the diversions by CONNAV. As Noble in turn informed the Admiralty, “the result of this

attempt to throw off U-boats is remarkable" because, from the time of the course change until two ships were torpedoed, ON 113 "made good NIL and in fact went to the Eastward." The convoy had, in fact, made a complete circle in U-boat infested waters. The staff at Liverpool, by implication, blamed the sinkings that night on the radical diversion. Noble recommended to the Admiralty: "As long as escorts are allowed to carry out evasive steering at their own discretion, shore authorities must never attempt to divert solely to throw off U-boats known to be in contact." In addition, while such action might shake off the shadower, it would not get the convoy into safer waters more quickly, and "might well 'evade' into another U-boat."⁶⁶

The Admiralty informed the British Admiralty Delegation (BAD) in Washington of these views and requested that they be presented to the Navy Department. The British won their point. CONNAV accepted the suggestions and "intended to reduce the present scale of evasive diversions which," in the future, would "be confined to special cases after consultation" with OP-20-G, the U-boat tracking room.⁶⁷

In the midst of the uproar, Western Approaches and the Admiralty seemed to have lost sight of the fact that it was not the diversion by CONNAV which had redirected the westbound convoy to the east. That decision was made by Commodore Roy Gill, RNR, the convoy commodore, and endorsed by Commander George H. Griffiths, RCN, the escort commander at the time. Why they altered back to the east after the turn to the north, instead of to the west as Taylor had intended originally, is not at all clear from their reports. The submarines to the south obviously prevented compliance with CONNAV's diversion in that direction, but the motive behind the adoption of an easterly course is a mystery. It may have allowed the two destroyers, which were absent astern, to rejoin more easily, although this seems an unlikely explanation considering their high turn of speed.⁶⁸

CONNAV's diversion caused some confusion, perhaps, but it certainly did not order an

easterly course. Although British comment implied that the backtracking was responsible for the losses, in fact, the extreme turns shook off all the shadowers but one (*U-552*) and quite possibly averted a devastating attack with the two destroyers absent. However, the course changes lengthened ON 113's voyage through air cover gap by several hours and offered the U-boats a chance to regroup for the following night. Thus, the "safe and timely arrival" of the convoy was delayed considerably.

Allied reaction to the performance of the escort was largely favorable. Commodore Gill observed that an "excellent offensive spirit was displayed by [the] Escort Group especially [by] HMS *Burnham* and HMCS *St. Croix*." Taylor singled out Littler for his role in the rescue operation: "*Brandon* worked among the boats of survivors in a most seamanlike and efficient manner and deserved praise for the despatch used under difficult conditions."⁶⁹

Not surprisingly, the sinking of *U-90* by HMCS *St. Croix* pleased the authorities. Captain E. R. Mainguy, RCN, Captain (D), Newfoundland, "considered that particular credit is due for switching the pattern to deep on losing contact at long range. This is evidence of good drill on the part of the Depth Charge Crews. HMCS *St. Croix* carried out an efficient hunt and thoroughly deserves her success." Commander C. D. Howard-Johnston, RN, Staff Officer (Anti-Submarine) at Western Approaches, agreed "entirely" with Mainguy's assessment and added that "the rate of delivery of the three attacks, one after the other, was most satisfactory." Dobson later was awarded the Distinguished Service Cross for his efforts.⁷⁰

It is surprising that there was not more comment on Taylor's performance as Senior Officer. The preoccupation with the diversions evidently allowed him to escape critical scrutiny. Although the sweeps by the two destroyers had indeed disrupted the gathering of the pack, the frequent and prolonged absence of these powerful ships from the screen made ON 113 vulnerable for most of the first two nights of enemy contact. The lengthy chases resulted in the

destruction of *U-90* but reduced the screen to four corvettes (and deprived C2 of the guiding hand of its escort commander) on nights when four to six submarines shadowed the convoy. Fortunately, the pack, with the sole exception of Erich Topp, failed to exploit the weakened escort because of the severe weather and extreme course alterations.

Taylor very rightly “considered it essential” to remain with the convoy during the third night (25/26 July) after the sinkings during the second night. The reduced escort — two destroyers and two corvettes — then held up to eight shadowers at bay: only when visibility fell drastically did Mengersen slip by the screen to torpedo *Empire Rainbow*. This was an impressive performance, although the employment of the other two corvettes in rescue work astern should have attracted some negative comment (as it would in future convoy battles). On balance, however, the escort had done well, especially when considering the extent to which the return of the wolf packs to the mid-ocean caught the Allies by surprise.

The role played by intelligence in the defense of ON 113 also might have stimulated more rigorous Allied analysis. Shore based HF/DF stations intercepted and relayed bearings on German U-boat signals to the escorts at sea regularly from 23–26 July. A rough count shows that ON 113 received one warning signal on 23 July, six on 24 July, and five on both 25 and 26 July. Delays of two to six hours in receipt of this intelligence, and the fact that the escorts almost invariably sighted the enemy prior to the arrival of warnings, reduced its operational utility. At the same time, the DF bearings furnished evidence of the growth of the shadowing pack and confirmed Taylor’s appreciation of the situation. None of the mid-ocean escorts possessed shipborne HF/DF, which would have been much more effective for directing sweeps. The role

played by MF/DF was not significant, although it did contribute to one U-boat sighting.⁷¹

Allied intelligence inferred from the U-boat operations against ON 113 that convoy battles in the North Atlantic were about to resume on a large scale. The pursuit of ON 113 and a public broadcast by Dönitz warning of higher U-boat casualties in the future led Rodger Winn to conclude that “the recent decrease in sinkings in the American zone” had persuaded “the Germans to change their strategy.” The new mid-ocean offensive was “unlikely to involve a complete withdrawal from American waters,” but the recent attacks revealed that “the comparative immunity recently enjoyed by transatlantic and UK-African convoys is a thing of the past.” Although Winn failed to detect the presence of Group *Wolf* astride the convoy lanes, subsequent U-boat operations in the North Atlantic would not catch him by surprise.⁷²

The battle for ON 113 was but a mild foretaste of the bitter struggles of the coming months. The mid-ocean campaign would involve vast numbers of U-boats, surface escorts, and aircraft, and would continue with only fleeting lulls until the decisive defeat of the wolf packs in May 1943 cleared the way for the Allied invasion of Europe.



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Notes

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6. BdU, War Diary, 9–19 July 1942; Jürgen Rohwer, *Axis Submarine Successes, 1939–1945* (Annapolis: Naval Institute Press, 1983), 23–103.
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9. Naval messages, 13 July 1942, D.Hist., 88/1 mfm, Vol. 9, ON 113; Great Britain, Admiralty, Operational Intelligence Centre, U-boat Situation Report, 20 July 1942, PRO, ADM 223/15.
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12. HMS *Primrose*, Report of Proceedings, ONS 112, 27 July 1942, D.Hist. 88/1, Vol. 9, ONS 112. C1 received six U-boat warnings between 23–26 July, once clear of the danger.
13. BdU, War Diary, 20–22 July 1942; *U-552* War Diary, 20–22 July 1942.
14. BdU, War Diary, 23 July 1942, Commodore's Report, SC 92 PRO, ADM 199/716. SC 92 was in position 54°08' North, 38°43' West (quadrant AK-47). The U-boats made contact with ON 113 in quadrant AK-78.
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16. HMS *Burnham*, Report of Proceedings, CN 113, 27 July 1942, PRO, ADM 237/87.
17. *U-552* War Diary, 23 July 1942; BdU, War Diary, 23 July 1942.
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24. HMS *Burnham*, Report of Attack, ON 113, 29 July 1942, PRO, ADM 237/87 (Taylor made two separate reports for ON 113); HMCS *St. Croix*, Report of Proceedings, ON 113.
25. HMCS *St. Croix*, Report of Proceedings, ON 113; HMCS *St. Croix*, Report of Attack on U-boat, 24 July 1942, National Archives of Canada (NAC), RG 24 D15, Vol. 11465, 1942 file.
26. HMCS *St. Croix*, Report of Proceedings, ON 113; HMCS *Burnham*, Report of Proceedings, ON 113; CTU 24.1.12 to COMINCH, 0017Z/25 July 1942, D.Hist., 89/34, Vol. 17, ON 113.
27. HMS *Burnham*, Report of Proceedings, ON 113. *U-597* had made contact in the meantime.
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29. HMCS *Drumheller*, Report of Proceedings, ON 113, 30 July 1942, PRO, ADM 237/87.
30. HMCS *Drumheller*, Report of Proceedings, ON 113; CONNAV to CTU 24.1.12, 1446/24 July 1942, D.Hist., Vol. 17, ON 113.
31. BdU, War Diary, 24 July 1942; *U-552* War Diary, 25 July 1942; HMCS *Brandon*, Report of Proceedings, ON 113, 27 July 1942, PRO, ADM 237/87; Commodore's Report, ON 113, PRO, ADM 237/87; SS *British Merit*, Attack on Merchant Vessel by Enemy Submarine, 24 July 1942, NAC, RG, 24 D1, Vol. 4025, NSS 1062-10-13.
32. *U-552* War Diary, 25 July 1942; Commodore's Report, ON 113; HMCS *Brandon*, Report of Proceedings, ON 113; Report of Interviews with Chief Officer of SS *Broompark*, 17 February 1943, PRO, ADM 237/87.
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43. BdU, War Diary, 25 July 1942, *U-86*, *U-607*, and *U-71*, War Diaries, 26 July 1942, D.Hist., 83/665.
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45. *U-71* and *U-607*, War Diaries, 26 July 1942, D.Hist. 83/665.
46. *U-607* War Diary, 26 July 1942; HMS *Burnham*, Report of Proceedings, ON 113; Rohwer, *Axis Submarine Successes*, 111.
47. *U-704*, War Diary, 26 July 1942; Rohwer, *Axis Submarine Successes*, 111.
48. Lieutenant Robert A. S. MacNeil was the father of Robert MacNeil (of MacNeil-Lehrer Report fame) whose memoir, *Wordstruck* (New York: Viking, 1989) contains many a reminiscence of his father's naval career.
49. *U-704*, War Diary, 26 July 1942; D.Hist., 83/665; HMCS *Dauphin*, Deck Log, 26 July 1942, NAC, RG 24 D2, Vol. 7253; CTU 24.1.12 to COMINCH, 0815Z/26 July 1942; HMS *Burnham* and HMCS *Dauphin*, Reports of Proceedings, ON 113, 4 August 1942, D.Hist., 89/34, Vol. 17, ON 113. Surprisingly, these attacks are not described in either ship's Report of Proceedings. The depth charge attack at 0740 is listed in *Dauphin's* deck log, while one signal reads, "*Burnham* and *Dauphin* attacking contact in the vicinity of torpedoed ship, 0815Z," confirming the identity of the attackers.
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56. HMS *Walker*, Report of Proceedings, ON 113; Hadley, *U-Boats Against Canada*, 108-109.

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61. Great Britain, Ministry of Defence (Navy), *The U-Boat War in the Atlantic*, II, 33; *U-607* War Diary, 27 July 1942.
62. BdU, War Diary, 25 July 1942. Ernst Mengersen (*U-607*) and Erich Topp (*U-552*) both had ten or more war cruises under their belts.
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65. Western Approaches, Staff Minute Sheets, ON 113, 9 August 1942 and 14 September 1942, PRO, ADM 237/87.
66. The rough draft of the summary is titled "Convoy ON 113," dated 17 September 1942; Commander-in-Chief, Western Approaches to the Secretary of the Admiralty, 28 September 1942, Memorandum, "Subject: Reports of Proceedings ON 113 and ON 115," PRO, ADM 237/88.
67. Admiralty to BAD Washington, 1900A and 1911A/20 October 1942, PRO, ADM 237/88; BAD Washington to Admiralty, 2009Z/28 October 1942, PRO, ADM 237/87.
68. HMCS *Drumheller* and HMS *Burnham*, Reports of Proceedings, ON 113. None of the reports state why the 090° course was taken.
69. Commodore's Report, ON 113; HMS *Burnham*, Report of Proceedings, ON 113.
70. Captain (D) Newfoundland to Flag Officer, Newfoundland Force, 22 August 1942; Western Approaches, Staff Minute Sheet, 10 September 1942, PRO, ADM 237/87.
71. DF bearings from U-boat warning signals in D.Hist., 89/34, Vol. 17, ON 112 and ON 113, and PRO, ADM 237/87.
72. Great Britain, Admiralty, Operational Intelligence Centre, U-boat Situation Report, 27 July 1942, PRO, ADM 223/15.



Historical Research in the UK

The Prize Courts of Great Britain and Scotland contain many cases involving American vessels and crews, such as that of Luke Ryan. A typical sample of this data can be viewed on the World Wide Web at http://www.st-and.ac.uk/~www_sa/personal/md4.

For details on commissioning research on Prize cases or for advice on research in the UK, please contact

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Readers' Forum

IN MEMORIAM

W. M. P. DUNNE, PH.D. (1934–1995)

The traditional professions of law and medicine are practiced by people who choose their careers in their twenties. Other disciplines, such as teaching, the arts, journalism, and theology frequently attract people who have reached middle age in previous careers. The current crop of North American maritime historians is in the latter class. We number among our leaders men and women who have enjoyed prior success as lawyers, business executives, museum officials, librarians, and naval officers. No one exemplifies this phenomenon better than the late W. M. P. Dunne, who died on Christmas Eve.

Following active service as a navy frogman in Korea, Dr. Dunne became a professional racing car driver and spent nearly twenty years in the European and American racing circuits. In 1974, he switched to naval architecture and became a yacht broker and designer. The turning point in his career came in 1981, when he won a two-year fellowship to study maritime history in Great Britain.

For the ensuing fifteen years, Dr. Dunne studied, taught, wrote, and preached excellence in maritime scholarship. Alone or in collaboration with others, he produced four books, five television films, seventeen major articles — including four for the *American Neptune* — and book reviews, symposia, and lectures without number. No one in our time has had a wider acquaintance with colleagues in our field and with the archival sources from which all of our authority is derived. No one has ever been more ready to put aside his own work in order to help another scholar with a suggested source, a useful introduction, or a gift of data from his own vast archive and library.

Bill Dunne will be sorely missed by all of us

for whom he was a lucid mentor, a fierce critic, and a true friend.

DONALD A. PETRIE

GILES M. S. TOD (1914–1995)

The American Neptune bids farewell to Advisory Board Member and maritime historian Giles M. S. Tod, who passed away in West Sussex, England, on 31 August 1995. A veteran of World War II, he acted as a service officer with the Cunard White Star Line, the US Coast Guard, and as a navigation officer in the Italian landings and the Normandy invasion, as well as participating in a voyage to the Grand Banks in the *Herzogin Cecilie*, to experience a voyage on the *Thomas S. Gorton*, Gloucester fishing schooner. Giles related many of his experiences through film and articles in magazines and newspapers.

We here at *The Neptune* will miss him.

USS CONSTELLATION

It is hoped that the paper on the USS *Constellation* in your Summer 1995 issue will close the controversy over her identity. *The American Neptune* has dealt with this controversy long and well, but it is purely academic and is generally detrimental to the efforts to preserve the vessel in Baltimore. The title of the recent (and hopefully last) paper is unfortunate. *The Frigate Strikes Her Colors* carries the implication that the vessel has been flying false colors. This is not the case.

USS *Constellation* at Baltimore has never been shown as an early frigate. It has always been shown as an 1853 naval vessel. Whether she is rebuilt or new is immaterial. What the visitor sees is an 1853 vessel that gives a fine authentic picture of navy life of the period. That USS *Constellation* does represent the 1853 period so well makes it more important educa-

tionally than would another frigate of the period.

Let us hope that all efforts will now be directed toward preserving and maintaining this important bit of our naval history.

H. HOBART HOLLY

Braintree, Massachusetts

LUKE RYAN

I was somewhat bewildered by the comments of Lois Ames (*American Neptune*, Vol. 55, No. 4 [Fall 1995]) on the gender of the Irish Fingallian privateer Luke Ryan. I am at a loss to give a definitive answer to the question posed, but I am inclined to think that the available historical evidence on this side of the Atlantic indicates that Luke Ryan was a male.

- It would be impossible to hide or disguise Ryan's gender from contemporary personages like the Dublin city shipbuilder John King when Ryan became an apprentice ship's carpenter in the mid-1760's. When Ryan abandoned his artiled apprenticeship and served under smuggling families such as the Connors, Dowling, Wilde, and Sweetman families of Rush during the 1770's, it would be practically impossible to disguise the individual's sexuality to such sharp and observant employers. In addition, if Luke Ryan were female, then this piece of evidence would have easily found its way into local folklore and tradition of the Fingal area. This has not occurred.
- At his trial, evidence was produced by the members of the powerful and influential Echlin family of Kenure about his rudimentary schooling at Hackettstown, where Ryan was described as "...the son of Michael Ryan," a yeoman farmer of Rush in the county of Dublin. Schooling was segregated at Hackettstown in common with the rest of Ireland at the time, and girls did not receive a formal education.
- Not only did Luke Ryan have a wife and children, he also had a mistress, Evelyn de Molier, who absconded with the bulk of his monies lodged with his bankers at Roscoff.

- High treason and execution in the sea-cages at Wapping never respected the sex of the individual.

However, I find the question of gender could be summed up by the phrase "...*de omoni re non scibili et quibusdam aliis.*" [...[that] about all things not knowable and some other [things]...]

EUGENE A. COYLE

Skerries
County Dublin

BACK ISSUES FOR SALE

In the Winter 1995 issue of *The American Neptune*, I note that several people are looking for back issues and you are providing something of a "clearing desk."

I have acquired 173 issues of *The Neptune* — every issue from January 1952 (Vol. 12, No. 1) to Winter 1995 (Vol. 55, No. 1), plus eighteen Pictorial Supplements — Nos. 1 through 20, except Nos. 4 and 5. All are paper covered as originally issued and all are in very good condition.

I would like to sell the entire set. I would prefer to give your members first shot at them before offering them to any maritime book dealers.

WALTER A. SHIELDS

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St. Petersburg Beach, Florida 33736
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We welcome hearing from our readers. Address all correspondence to The American Neptune Readers' Forum, Peabody Essex Museum, East India Square, Salem, MA 01970-3783, or on the Internet at dori_phillips@pem.org. To be considered for publication, include your name, address and phone number. Please note that letters may be edited for space and clarity. All non-English quotes must be accompanied by an English translation. Letters become the property of The American Neptune. The opinions expressed in all Readers' Forum letters do not necessarily reflect the opinions of The Neptune.

News

MUSEUM EXHIBITIONS

FROM LIVERPOOL TO SOUTH STREET

In May 1996, the South Street Seaport Museum, New York, NY, opened two exhibitions on nineteenth-century transatlantic trade and immigration. "Across the Western Ocean: American Ships by Liverpool Artists," organized by the Peabody Essex Museum, will run until the end of summer, when it will travel to Philadelphia's Independence Seaport Museum. Accompanying this exhibit of Liverpool-school marine paintings is an exhibition focused on immigration into the port of New York, titled "Immigration in the Age of Sail."

CONFERENCES

SECOND INTERNATIONAL CONGRESS OF MARITIME HISTORY

The Netherlands Association for Maritime History will sponsor a conference entitled "Evolution and Revolution in the Maritime World in the Nineteenth and Twentieth Centuries" that will meet from June 5-8, 1996, in Amsterdam and Rotterdam. The conference will focus on changes in the maritime world during this period in three thematic sessions: Nautical Science and Cartography; Shipbuilding, Design, and Construction; and Management of Shipping Companies, Navies, and Ports. For information, contact the Congress Secretariat, PO Box 102, 2350 AC Leiderdorp, The Netherlands.

INTERNATIONAL ASSOCIATION FOR THE STUDY OF MARITIME MISSION

The fourth international maritime mission conference will be held April 7-10, 1997 on

Enders Island, Mystic, Connecticut. The theme will be "Nineteenth Century Maritime Philanthropy: Social, Religious & Economic Contexts." Proposals for twenty and forty minute presentations should be submitted by June 30, 1996, to Robert Miller, Allen Hall, 28 Beaufort Street, Chelsea, London, SW3 5AA, United Kingdom.

LIFESAVING SERVICE HISTORY

The US Life-Saving Service Heritage Association was formed during the first Lifesaving Station Symposium, held last September. The group is dedicated to preserving and interpreting the history of the US Life-Saving Service and related organizations by creating an inventory of over 150 surviving lifesaving properties. The Association's mailing address is PO Box 12, Hull, MA 02045.

AWARDS AND DISCOVERIES

CANADA'S ADMIRALS' MEDAL

The Admirals' Medal Foundation has awarded the Admirals' Medal for 1995 to Dr. Joseph B. MacInnis, in recognition of significant personal contributions to Canadian maritime affairs. This award acknowledges his many contributions to diving medicine and underwater exploration of the high arctic and deep ocean. Joe MacInnis has made significant medical contributions to human performance under the sea and invented underwater stations for submerged work in the Great Lakes and Northwest Passage. In 1970, he formed the James Allister MacInnis foundation for underwater research and education in Canada. His endeavors include leading the first team of scientific divers under the North Pole, discovering the world's northernmost shipwreck, HMS *Breadalbane*, in Canada's Northwest

Passage, and being the first Canadian to dive to the *Titanic* in the foothills in Canada's Grand Banks.

DISCOVERY OF LA SALLE'S SHIP *BELLE*

In July 1995, a team from the Texas Historical Commission discovered the 300-year-old wreck of a ship once belonging to the French explorer La Salle. The wreck was identified through an ornately decorated bronze cannon as a small

frigate that ran aground in a squall in 1686. The frigate *Belle*, a gift to La Salle from King Louis XIV, was found in about twelve feet of water. Further excavation of the wreck will continue once funding has been secured, to investigate aspects of daily life in the French New World colonies, as well as naval architecture of the earliest French vessel yet located in the Western Hemisphere.

CORRECTIONS

In the review of the book *Thomas F. McManus and the American Fishing Schooner*, [*American Neptune*, Volume 54, Spring 1994 issue, page 368, in the thirteenth line from the top of the second column], the word "wealthy" should be "worthy."

In the review of Noble, *That others Might Live* [*American Neptune*, Volume 55, Number 3, page 271], the sentence beginning "There is a Cape Aargo..." should read, "there is no Cape Aargo — Cape Arago is 120 miles north of the border..."

WE APOLOGIZE FOR THESE MISPRINTS.

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Book Reviews

BRUCE LOXTON WITH CHRIS COULTHARD-CLARK, *The Shame of Savo: Anatomy of a Naval Disaster* (Annapolis: Naval Institute Press, 1994). 9¼" x 6¼", cloth, 319 pages, 37 illustrations, 11 maps, three diagrams, two appendices, end notes, bibliography, index. \$29.95.

In the battle of Savo Island, fought in the pre-dawn darkness of 9 August 1942, a Japanese surface force under Vice Admiral Mikawa Gunichi, comprising four heavy cruisers, two light cruisers, and a destroyer, battered two successive groups of heavy cruisers and destroyers guarding American transports off Guadalcanal and Tulagi in the Solomon Islands. Fortunately, Mikawa did not press on once he had annihilated the covering force; the transports and cargo ships continued unloading. Keeping Mikawa from the vital auxiliaries, though, had been achieved at the cost of three US heavy cruisers (sisterships *Astoria*, *Quincy*, and *Vincennes*), and the Australian heavy cruiser HMAS *Canberra* sunk and US heavy cruiser *Chicago* and two destroyers damaged. Over 1,000 Allied sailors died.

Emotions run high over Savo Island, particularly in the US Navy, which quite rightly regards it as one of the worst defeats suffered in its history. Australian sensibilities, too, are strong, not only because of the loss of *Canberra*, but because of reports of incompetence (subsequently proved groundless) in Royal Australian Air Force reconnaissance efforts on the eve of the battle.

The Shame of Savo's principal author, Commodore Bruce Loxton, survived *Canberra*'s ordeal as an eighteen-year-old midshipman. Recuperating from his wounds, Loxton returned to his homeland, one of a group of survivors met at Sydney by an Australian flag officer who informed his hearers that they "should feel ashamed that [*Canberra*] had been sunk by gunfire without firing a shot in return." Over the decades that followed, as his own career pro-

gressed and he attained experience in the areas of "ship handling, staff work, and tactical analysis," that rebuke compelled Loxton to "find out the truth of what had happened" during the battle.

Having been a member of *Canberra*'s ship's company during the initial phase of Operation WATCHTOWER (the invasion of the Solomons) and the battle of Savo Island allowed Loxton a unique eyewitness opportunity. *The Shame of Savo* is a valuable contribution to the literature on the campaign for the Solomons, ably complementing Alan Payne's fine monograph *HMAS Canberra* (1973). While Payne raises the possibility that *Canberra* had been torpedoed at Savo Island, Loxton goes even further, presenting a thought-provoking scenario that fingers US destroyer *Bagley* as the culprit that mistakenly torpedoed the Australian ship and rendered her *hors de combat* at a critical juncture early on.

Assisted by Australian military historian Chris Coulthard-Clark and conducting research of primary sources in the United States, Australia, and Great Britain, Loxton writes that *The Shame of Savo* — the second Savo book to emerge from the Naval Institute within two years (the other being Denis and Peggy Warner's 1992 *Disaster in the Pacific: New Light on the Battle of Savo Island*) — "provides a fuller answer than has hitherto been available and reveals an extraordinary and widespread concatenation of human and systematic errors and shortcomings." The showing of the Allied force in the pre-dawn darkness on 9 August 1942, he posits, "was not one of which any Allied officer could be proud." The strengths of Loxton's study lie in its analysis of the strengths and weaknesses of battle tactics, command relationships, aerial reconnaissance, and intelligence. One comes away from reading *The Shame of Savo* with a renewed appreciation for the nickname applied to WATCHTOWER: "Operation SHOESTRING."

Loxton and Coulthard-Clark attribute a large share of blame for what happened to what they

term a contributory factor of the withdrawal of the American aircraft carriers from close air support of WATCHTOWER. They pronounce Admiral Frank Jack Fletcher, the expeditionary force commander, as “badly flawed,” buttressing the assessment, however, with the acerbic and self-serving memoirs of a very junior officer on Fletcher’s staff. *The Shame of Savo* ignores recent scholarship that assesses Fletcher’s role as a combat commander between December 1941 and September 1942. Conspicuous by its absence from the bibliography is John B. Lundstrom’s *The First Team: Pacific Naval Air Combat from Pearl Harbor to Midway* (1984) and the same author’s “Frank Jack Fletcher Got a Bum Rap” — the second part of a two-part defense of Fletcher’s actions from Wake Island to Guadalcanal in *Naval History* (Fall 1992) — the latter specifically treating the issue of Fletcher’s withdrawal of the carriers covering WATCHTOWER. Although the authors seem to castigate Fletcher for allowing the survival of the carriers to influence his decisions as to how long the flattops would provide close support to WATCHTOWER, a case could be made that the survival of carriers in the end allowed for Guadalcanal to be held by the Americans.

While Loxton’s description of British/Australian equipment is first rate, the text betrays occasional unfamiliarity with US ship types and nomenclature in reference to “destroyer transport” and “destroyer minesweeper” when in fact “high speed transport” and “high speed minesweeper” are meant. Fleet oilers *Planne* and *Kanawha* are lumped together as “large, fast ships” when they were, in fact, altogether different classes of vessels. Concerning the unsuitability of the transport *McCawley* as a command ship, it should be noted that *McCawley* was not originally built as a naval vessel at all (let alone a well-equipped command ship), but as a passenger-and-cargo motor liner built — in Great Britain — for the Grace Line.

The Shame of Savo is a good read and contributes to our understanding of what went wrong at Savo. Loxton correctly points out that for all of the errors made by the US Navy at Savo Island, that service eventually learned, and learned well, the bitter lessons taught by Mikawa

and his bold sailors. Loxton’s professional military attainments give authority to his judgments, although this reviewer feels that Frank Jack Fletcher, a key figure in the drama, needs a fairer hearing than he gets.

ROBERT J. CRESSMAN

Naval Historical Center

ROBERT GARDINER, *The First Frigates: Nine-pounder and Twelve-pounder Frigates, 1748–1815* (London: Conway Maritime Press, 1992), 128 pages, 100 illustrations, notes, source references, index. ISBN 0-85177-601-9. £25.00.

To the truly uninitiated, any vessel that carries sails and is larger than a rowboat is a “frigate.” To the slightly more knowledgeable, any naval vessel that carries sails is a “frigate.” To the typical eighteenth-century admiral making a list of available men-of-war, there was typically no need to include anything so inconsequential as a frigate, concentrating as he would on ships of the line. To the infant American Navy fighting in both the American Revolution and the War of 1812, the large frigate represented the *ne plus ultra* of naval shipping, and names like *Constitution* and *Constellation* resonate in the national memory to this day. As a class of vessels, then, the frigate has proven surprisingly enigmatic, fascinating yet hard to understand. Robert Gardiner has done much to remedy this shortcoming.

Gardiner served as editorial director of Conway Maritime Press for fifteen years, and during that period had the opportunity to encourage many of the fine works to come out of that house. Now he has produced the first of his own studies, and it is as workmanlike and thorough as one might expect. He has used his close personal and professional relationship to the National Maritime Museum in Greenwich to good advantage, and he has relied heavily on the remarkably rich trove of plans, logs, and correspondence housed there. It is obvious that no study of eighteenth-century British naval vessels could be

undertaken without reference to that collection, but his detailed familiarity with the material has enabled him to take full advantage of the resource. As a consequence, the text of the book is heavily bolstered by the liberal reproduction of contemporary draughts and models from that collection.

The introduction of a small and fast cruiser into the somewhat hidebound British Navy represented a significant and conscious departure. At war with both France and Spain during the 1740's, the British found themselves outmaneuvered at sea. With mounting losses of both naval and merchant vessels, the Admiralty sought to improve its capabilities. When the newly adopted Establishment of 1745 failed to yield any new ideas, the Admiralty was forced to look outside its own ranks for inspiration. The capture of the French privateer *Tygre* in 1747 provided the necessary opportunity. The lines were taken off this St. Malo vessel that mounted twenty-six nine-pounders on a single deck, and two English clones were built in the royal dockyards. HMS *Unicorn* and HMS *Lyme* were launched in 1748 and represented an entirely new approach. Their excellent sailing qualities, combining speed and maneuverability, sounded the death knell for the more traditionally designed 24-gun ship. With increasing hostilities in the early 1750's, an entire class of frigates of this model were built.

The English frigate was thus based on a French prototype, used primarily against the French in combat, and continually held up to French vessels for comparison. As class followed class, the frigate established an indispensable role for itself in fleet operations. Whether sailing in support of the activities of a larger fleet or operating independently, especially against enemy commerce, these nimble ships proved their worth time and again. Mounting nine- and twelve-pounders, they were lightly armed by the standards of the day, but they made up for that in other ways.

Gardiner divides his study into two parts. He devotes the first half of the book to a design history of these ships from 1748 through 1785. He explains some of the politics and design theory that went into the establishment of each

new class, and he is generous in reproducing line drawings and models of representative examples of each class. The second section is a more detailed investigation of the ships themselves. It goes far beyond the usual broad brush treatment, and offers us a close look at a variety of features — armament, internal arrangements, masting and rigging, and performance. He is sensitive to the needs of model builders as he offers not only hull dimensions, but also mast and spar dimensions, specifications for anchors and cables, and even a listing of the requisite small craft needed for each ship. Among the most interesting tabulations is a summary of performance characteristics based on the "Sailing Quality Report" filed periodically by each captain. These fairly comprehensive (and little known today) reviews of a vessel's capabilities enable comparison among not only British-built ships, but among captured ships as well. American pride notwithstanding, it appears the American-built frigates captured during the Revolution were judged inferior to their French and English counterparts in both sailing ability and construction (an area where the English were particularly intolerant).

Well written, broad in its approach, handsomely produced, and completely thorough, it must still be said that this book is not liable to head the list of favorites for bedtime reading. Gardiner set out to write both a technical history of this class of ships and a comprehensive reference work; he has succeeded admirably at both. The technical detail he provides should make this work useful to students of naval architecture and to ship modelers, while the author's successful effort at putting the development of the ships into a larger context gives his work broader appeal. If you've always wondered about the enigmatic frigate as a class, if your curiosity is piqued, or if your frustration is high after having tried to learn more about a specific eighteenth-century British frigate, this is a superior place to begin your investigations.

JOHN O. SANDS

Colonial Williamsburg Foundation
Williamsburg, Virginia

RICHARD HOUGH, *Captain James Cook: A Biography* (New York: W. W. Norton, 1995), 398 pages.

Captain James Cook made three spectacular voyages of exploration to the Pacific between 1768 and 1779, in the course of which he made many important discoveries, particularly in Australia, New Zealand, and the Antarctic region. Cook described these areas and his activities for the most part in his *Three Voyages Round the World*, but subsequent biographers — of which Richard Hough is the latest and one of the best — have told Cook's story in appropriately glowing detail and with poignant insight.

Born of humble circumstances in Marton, Yorkshire in 1728, Cook went to sea early, joined the Royal Navy, received a commission, and gained a reputation as a stalwart navigator and leader. In 1778, on his third voyage, he encountered the Hawai'ian Islands, which he called the Sandwich Islands, and he explored the west coast of North America all the way to the Bering Strait. He then returned to Hawaii, where he was killed by hostile natives early in 1779.

Many honors have been paid to Cook's memory, including the erection of an obelisk at Kealahukua Bay near the place where he was slain. Perhaps only Christopher Columbus has left a deeper mark than James Cook on the history of European exploration. It is fortunate for us today that during the latter part of the eighteenth century, Europeans were prone to make maps and journals abundantly and meticulously. Cook's voyages, therefore, were recorded not only in his massively detailed logs and journals — probably the best ever kept by a European explorer — but also by other officers on his ships and the several scientists who went along on the voyages, principally Sir Joseph Banks.

The present volume is a fine work which provides a fresh look at a familiar story. Richard Hough's work will not replace J. C. Beaglehole's 1974 classic *The Life of Captain James Cook*, which remains the benchmark biography, but it does rival Robert D. Craig's 1978 excellent bicentennial work *Captain Cook in the Pacific*.

Hough establishes Cook as a link between the vague scientific speculations of the early eighteenth century and the industrial revolution which was to come. Hough's experience as a historian and biographer, together with the massive records available, has provided a solid foundation for his accomplishing this work. Moreover, Hough traveled, as he says, "in the wake of the eighteenth century navigators, from Cape Horn and southern Tasmania in the southern hemisphere, to Vancouver and Alaska in the north, taking in certain parts of the eastern seaboard of Australia, especially the Great Barrier Reef, part of the coastline of New Zealand, all of the French Society Islands, and all of the American Sandwich (Hawaiian) Islands" (p. xiii).

In 1768, the Royal Society engaged Cook to go to Tahiti in the *Endeavour* in order to observe the passage of Venus across the sun as well as to explore the area with a view to locating the unknown *Terra Australis*. Cook was selected, as Hough points out, because of his earned reputation within the British Navy as a seaman and cartographer from his work in Quebec ten years earlier, when he corrected the charts of the entire St. Lawrence River and estuary.

Joseph Banks went along on this first voyage and collected flora as well as anthropological data on the newly encountered peoples of the Society Islands. Before returning to England, Cook charted the coast of New Zealand, but did not find the *Terra Australis*.

Cook was heralded when he returned home, promoted to commander, and sent off on another voyage in 1772 to continue to seek the mysterious southern continent. He sailed into the Antarctic with his two ships *Resolution* and *Adventure*, charted the area, then set out to relocate many other islands which had been visited before but which "floated around in the ocean" due to the imprecise and crude instruments previously used. It was on this voyage that Cook encountered and landed on an island in the vicinity of 30° south latitude and 170° east longitude which he named Norfolk Island, "in honor of that noble family" (p. 241). On this isolated, small island, he found giant spruce pine trees which are today valued throughout the Pacific Islands as the

Norfolk pines.

A great contribution of Cook's was the maintenance of health among the sailors. Not only did he make improvements in his seamen's diets, he also insisted that his guidelines on general individual hygiene be followed:

"After about six weeks at sea the fresh... wild celery and scurvy grass (from New Zealand) had become exhausted, but Cook continued to implement the healthy diet, with plenty of malt and sauerkraut. He was also just as severe about personal cleanliness, the airing of blankets and the frequent airing of the ship. Decks were scrubbed with vinegar and salt water, and smoked with 'fire balls' (p. 219).

Scurvy, while making itself known on several occasions, was never a serious problem on these voyages and cost the lives of no sailors. Oranges, limes, and lemons are usually credited with the demise of scurvy and are effective, but for Cook they were not the deciding factors. His success with his crew's health was most likely related directly to his frequent stops, harvesting of the local greens and their consumption as salad at the crews' mess. These green vegetables and other fresh foods provided ample amounts of vitamin C.

Cook had changed between his first and third voyage. Hough points this out through a serious examination of the evidence of physical and mental decline of the great captain. Herein is another contribution of Hough's which has not been dwelled upon in such organized and convincing detail by other biographers.

Following Cook's death at the hands of the Hawai'ians, Charles Clerke assumed command and took the *Adventure* and *Resolution* home to England. These three great circumnavigational voyages from 1768 to 1779 were of immense success and significance because of the preservation of sailors' health, the opening of new lands for colonization and trade, and, finally, for the resulting shift in empirical power in the Pacific from Spain and France to England. With the end of Cook's voyages, the period of Pacific explora-

tion is generally considered to have come to a close.

DIRK BALLENDORF

University of Guam

WAYNE M. O'LEARY, *The Tancook Schooners: An Island and Its Boats* (Montreal and Kingston, ON: McGill-Queen's University Press, 1994). 290 pages, illustrations, drawings, appendices, bibliography, index. ISBN 0-7735-1172-5 cloth edition. \$44.95 Canadian. ISBN 0-7735-1206-3 paper edition. \$17.95 Canadian.

"Tancook" is actually two islands: "Big Tancook" and "Little Tancook" are situated in the mouth of Mahone Bay, Nova Scotia, roughly thirteen miles northeast of Lunenburg and some forty-five miles southwest of Halifax. The name will be familiar to many readers as a result of its vessel types — the Tancook whaler and the Tancook schooner. This book is obviously about the latter. Wayne O'Leary, the author, traces his ancestry to Tancook. During the course of many summer visits in the 1950s and 60s, he realized that the islanders' way of life was fast disappearing, along with their well-known boats. *The Tancook Schooners* is the product of his determination to gather together photographs and half-models and to investigate the islands' traditions and heritage through extensive interviews and exhaustive research.

This book is divided into four chapters. Chapter One is brief and deals with the "island," its early history, its people and their way of life. Chapters Two and Three form the "meat" of the book (a poor choice of words; "fish" would be better!). In the second chapter, O'Leary concentrates on the boats themselves. Although the Tancook whalers have been dealt with in detail in other books, the author, after some discussion of the earliest boats built on Tancook — the "lobster" or "jolly" boat — spends some twenty pages outlining the Tancook whaler's ancestry and the reason for it being employed and built there. While enabling the reader to understand the later schooners' development, this also

allowed the author to introduce the various boat-building families of the islands. Given such a lengthy discussion, perhaps there should have been a good photograph of a whaler and a set of lines. Ample illustrations in the form of photographs, lines, sail plans, and deck layouts are given for the schooners. The remainder and bulk of this chapter is given over to the early schooners of the first decade of this century, their subsequent development, the introduction of the motor-driven boats, and a discussion of the ultimate three "classes" of schooners — "deck boats" (generally over 50' in length), "hatch boats," and "semi-deck boats" — and their individual uses.

The third chapter, "The Economy," is concerned with the uses of the boats. In this section, the unique adaptation of the boats to all the islands' "industries" became apparent — their schooners (and not just any boats) were an integral part of the economy. O'Leary traces the first shore fishery, based on herring and mackerel, the offshore fishery, which also included cod, and the "distant seas" voyages in which swordfishery off Cape Breton was paramount. Life aboard and operation of each fishery, as well as the necessary modifications to the boats are detailed. Cargo carrying, including a brief mention of bringing coal home from Cape Breton, is described. The lucrative (but sometimes illegal) transportation of rum and other alcohol rates several pages. However, Tancook's main agricultural crop, cabbage and its related sauerkraut, demands a much larger part of the chapter. This includes discussion of the crop rotation system, the process of sauerkraut making, methods of handling these cargoes, and the distribution of same in their major port of call, Halifax.

The final chapter outlines the reasons for the schooners' decline in the 1930s and 40s — roads, lack of markets, and the Cape Island boat.

This book is thoroughly researched and well documented. Wayne O'Leary's love of his subject shines through in the nature and depth of the study as well as in his style and presentation. This is a readable and understandable book which will appeal to many nautically minded readers — not just to the small boat fans. Indeed, the larger schooners were not "small boats." In

keeping with the standards of the press of two leading Canadian universities, this book has several useful appendices, including annual fishery catches, lists of the registered schooners (many were too small for registration), a glossary of Tancook marine terms, numerous source notes, an extensive bibliography, and a thorough index. All in all, this is a book of which both the publishers and, especially, the author can be proud.

ERIC J. RUFF

Yarmouth County Museum
Yarmouth, Nova Scotia



ELINOR DE WIRE, *Guardians of the Lights* (Sarasota, FL: Pineapple Press, 1995). 6" x 9", 340 pages, 130 black and white illustrations, 8 color photos. ISBN 1-56164-077-8. \$27.95.

This is a book in which the cast of "usual suspects" — luminaries of conventional lighthouse history such as Benjamin Lincoln, Winslow Lewis, Stephen Pleasonton, I. W. P. Lewis, and George R. Putnam — scarcely make an appearance, and Edward Rowe Snow enters as a historical figure rather than a historian. One can finish this book and hardly encounter the term "fresnel lens" or know that such a thing as the Lighthouse Board existed.

It is, in short, not a history of lighthouse administration or lighting technology, which is probably just as well. With the steady proliferation of books on lighthouses, each new entry has to make a case for itself. In *Guardians of the Lights*, Elinor De Wire has chosen a niche that is both useful and interesting. Subtitled "Stories of the U.S. Lighthouse Keepers," it describes the human (and sometimes superhuman) aspect of tending the lights. With human keepers fading into memory, like so much else that once seemed charming in this country, De Wire's timing is appropriate.

The chapters are arranged topically, covering

subjects such as storm, fire, children, pets, women lighthouse keepers, and — predictably — ghosts. In presenting these accounts, De Wire achieves a good geographical balance with examples from various regions, Great Lakes as well as seacoasts, harbor lights as well as coastal. It is not easy to maintain this kind of proportion, but no favorite lighthouses or areas seem to predominate. A similar distribution is evident in the photos, some of which are in color.

De Wire maintains the same kind of balance in her assessment of lighthouse life, as represented by the selection of stories. On occasion, the narrative is almost poetic in its depiction of the idyllic aspects of keeping the light. However, there are also abundant reminders of the loneliness, harshness, and sacrifice that often characterized this seemingly romantic calling. Similarly, while amply crediting the exceptional heroism of many in the Lighthouse Service, De Wire includes a chapter which demonstrates that this occupation also attracted some who were not equal to its demands. A final chapter, "The Best Places to Walk in the Footsteps of the Keepers," presents a brief guide to the lighthouses the author considers the outstanding remaining examples.

This book is not intended for a scholarly audience. It is not footnoted and contains only general bibliographic references to each chapter. Despite a jacket blurb which claims: "These are just a few of the true, never-before-told stories of the stalwart individuals who kept the lights burning," it is unlikely that serious students of the subject will find much that is new to them. The author apparently conducted little original documentary research for this book. She did, however, pursue primary research in another valuable medium by interviewing former keepers and their families. This highlights the need to do more such oral history in a systematic way while the human resources are still available. A few misspellings or factual errors can be found, but the author's contacts with Wayne Wheeler of the US Lighthouse Society presumably helped keep these to a minimum.

Guardians of the Lights will provide enjoyable and informative reading to the growing numbers of people who seem to regard light-

houses as a reassuring beacon in a world that is changing too rapidly.

LARRY LOWENTHAL

Historian, US National Park Service
Boston, Massachusetts

CHARLES M. ROBINSON, III, *Shark of the Confederacy: The Story of the CSS Alabama* (Annapolis: Naval Institute Press, 1995). 230 pages, 21 illustrations, appendices, notes, bibliography, index. ISBN 1-55750-728-7. \$25.00.

In June 1864, as sailors aboard the USS *Kearsarge* saw the famous Confederate raider CSS *Alabama* for the first time, a Union surgeon observed: "Officers and men gathered in groups on deck, and looked intently at the 'daring rover' that had been able for two years to escape numerous foes and to inflict immense damage on our commerce. She was a beautiful specimen of naval architecture" (p. 128). A few days later, the sleek Rebel raider sailed out of the French port where she had been docked for repairs and met the Union gunboat at sea. As spectators on the shore watched, the men on board the *Kearsarge* sent the Southern vessel to a watery grave off the coast of France. The death of the *Alabama* prompted the *London Times* to observe: "We do not concern ourselves with legal quibbles; we decline to take a lawyer's view of her. She was a good ship, well handled and well fought, and to a nation of sailors that means a great deal" (p. 160).

In one of the few books to focus on the famed raider, author Charles M. Robinson tells the story of the *Alabama*, from her construction in England to her destruction in the English Channel. To Southerners, the ship epitomized the success that did not always come on land. To Northerners, the *Alabama* was a dangerous foe with a crew who were little better than pirates.

The ship had begun as vessel No. 290 in the Laird's Shipyard in Birkenhead, near Liverpool, England. Christened the *Enrica* and launched in 1862, she sailed out of the British port on a trial

run and never returned. Renamed the CSS *Alabama* and given to Captain Raphael Semmes, the elegant wooden steamer ran up the Confederate flag and headed out to sea in August.

Semmes had instructions from Confederate President Jefferson Davis to raid the US Merchant Marine, and for the next nineteen months, the *Alabama* terrorized American commerce. In December 1862, Secretary of the Navy Gideon Welles confided to his diary: "It is annoying when we want all our force on blockade duty to be compelled to detach so many of our best craft on the fruitless errand of searching the wide ocean for this wolf from Liverpool" (p. 69). The Confederacy had several raiders at sea, but the *Alabama* was the one that troubled Abraham Lincoln most.

By the spring of 1864, the *Alabama* badly needed repairs. Heading for France, Semmes took his ship into the harbor at Cherbourg. It was there that one of more than a dozen warships looking for the raider found her. The *Alabama* could have made a run for freedom; Robinson discusses the options facing Captain Semmes as the *Kearsarge* neared the coast. Nonetheless, the author concludes that Semmes "knew from the newspapers that the Southern cause was living on borrowed time; therefore, the *Alabama* no longer had any reason to exist. Rather than have her enter history as a 'commerce raider' and a 'pirate,' he intended that she be remembered for what she was — a fighting ship" (p. 133). Crippled and no match for the Union vessel, Semmes chose to go down fighting.

This meticulous account of the career of the CSS *Alabama* also includes an epilogue that describes the recent archaeological discoveries of both the *Alabama* and one of her most famous victims, the *Hatteras*. Although the *Alabama* struck Union shipping on both sides of the Atlantic, it was an incident close to home that many Americans remember. While in the Gulf of Mexico in 1863, the ship sunk the USS *Hatteras* off the Galveston shore in just thirteen minutes. Two Yankee sailors were killed and five wounded, but the author points out that most of the deaths caused by the *Alabama* were in combat, not in boardings.

Robinson also touches on the current interna-

tional issues associated with the remains of the Confederate raider, for she rests in French territorial water. Since the US State Department has made legal claim to the wreck, this volume includes the texts of the 1989 Congressional legislation, the "CSS *Alabama* Preservation Act." Moreover, there is one section devoted to a detailed description of the ship (since no photograph exists), and a second that lists the sixty-five ships that succumbed to the famous raider. The total value of the property destroyed by Captain Semmes was \$4,613,914 — some eighteen times the cost of the ship's construction — making the *Alabama* one of the wisest investments that the Confederate government ever made.

Robinson does not become bogged down in American politics, nor does he spend too much time exploring the complexity of international law involving the Confederacy's dubious legal standing in world affairs. Robinson, however, argues that the *Alabama* "is more appreciated in Europe and South Africa than in her own country" (p. 154), and this narrative is an attempt to correct that oversight. He has told a story, a tale of the *Alabama* and the men involved in her career. For readers interested in a detailed description of this illustrious vessel, Robinson has tried to separate fact from legend in this concise and analytical account.

ANNE J. BAILEY

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ROBERT D. BALLARD WITH SPENCER DUNMORE, *Exploring the Lusitania* (New York: Warner Books, 1995). 9" x 11½", cloth, 228 pages, 268 illustrations in black and white and color, twelve original paintings by Ken Marshall, bibliography, index. ISBN 0-446-51851-4. \$45.00.

The world never lacks for spinoffs on official reports; for instance, the theorizing that followed on the 1964 Warren Report about a second gunman and the grassy knoll at Dallas. Conceivably, the *Lusitania* disaster started this rumor-mongering tradition, especially about the second

explosion that followed her being torpedoed off southern Ireland in May 1915, and why that resplendent liner sank so quickly.

Scholarly and popular writers over the years have taken on the topics. In 1956, A. A. and Mary Hoehling in *Last Voyage of the Lusitania* attributed the second blast to ruptured steam pipes. Colin Simpson (the reigning Mark Lane of *Lusitania* speculators) in *The Lusitania* (1972) wrote that the explosion came from illegally stowed guncotton; more ominously, that Winston Churchill and Woodrow Wilson plotted a coverup. In 1979, Thomas A. Bailey and Paul B. Ryan dismissed Simpson in *The Lusitania: An Episode in Modern Warfare and Diplomacy* as follows. The U-20 torpedo struck 10' below the starboard waterline between the first and second funnels, and between boiler rooms 1 and 2. Once cold sea water reached the boilers, their explosive force loosed itself against the deck and overheads. That cut off electrical power. Worse, watertight doors and scores of portholes negligently left open towards the end of the crossing stayed open, aggravating the list. *Lusitania*, still working off her 18-knot momentum, dived like a submarine and destroyed her bow on contact with the bottom. The result was the loss of 1,200 lives.

Exploring the Lusitania disputes Simpson and goes along up to a point with the Hoehlings and Bailey and Ryan, but maintains that the torpedo struck just aft of the bridge and that the second explosion emanated from suspended coal dust in a hold aft of the so-called magazine.

This marks the third of Robert D. Ballard's wreck investigation volumes since *Discovery of the Titanic* in 1987 and *Discovery of the Bismarck* in 1990. Its title owes to its lacking the convention of the earlier volumes, the suspenseful narrative of a search for the wreck's position. It further differs in that Ballard identifies a collaborator in Spencer Dunmore, a Canadian historical novelist. When Ballard cited himself as sole author in the earlier books, some readers sensed a tendency toward self-celebration. The self-effacement benefits *Exploring the Lusitania*, which addresses a general readership and addresses it well; its narratives, descriptions, testimonies, and data come through in concrete,

workmanlike prose. Mind you, the Ballard-Dunmore persona can seem a Marxist crank when it mulls over *Lusitania's* class configurations; it also telescopes a woman survivor into the 1990s with a feminist interior monologue: "...These unthinking, impatient males were now her charges.... Why, she wondered, did the daughter of the house always seem to be saddled with more responsibility than the males? It was unfair. Just like a lot of other things in life, she was beginning to discover."

What justifies the price of *Exploring the Lusitania* is its remarkable, intelligently formatted graphics. Ken Marschall defined a new genre in maritime art in the *Titanic* and *Bismarck* books. He surpasses himself here with the plates of *Lusitania* in service, under attack, listing, foundering, and envisaged on the bottom. The background graphics of the liner's interior and the contemporary promotional and propaganda photos are informative and helpfully captioned. The 1992 frames of the liner on the bottom are another, perhaps discomposing matter.

Possibly, the photos of the *Titanic* and *Bismarck* accustomed readers to romantic expectations of how a great, fated vessel now looks on the bottom. We saw it in *Titanic's* upright, noble bow, in *Bismarck's* raised, futile ordnance. *Exploring the Lusitania* takes a visually tougher, more realistic stance, or else the condition of the wreck itself gave its editors no choice. The photographs are mostly compelling, often repellent. They record the liner flat on her starboard side, and a hull crack aft of the site of the third funnel suggests that, like *Titanic*, she nearly broke in two on the surface. Fifty percent of her beam has collapsed and her superstructure has sloughed off into a mass of undifferentiated rubble. The four great stacks are gone and the bow twists away from the hull like a broken nose.

This book does not settle the more controversial overtones of the *Lusitania* loss; to my mind, Bailey and Ryan come closest to that ideal, but Ballard explores the subject well.

JOHN CHRISTIE

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H. W. WILSON, *Battleships in Action*, 2 vols. (London: Conway Maritime Press, 1995). 9½" x 6¼", cloth, line drawings, photographs, tables, index, bibliography. *Vol. I*, xix + 337 pages; *Vol. II*, xiii + 384 pages. ISBN 0-85177-642-6. £50.00.

This book is a reprint of the classic 1926 collected works of the H. W. Wilson edition. The title is a bit of a misnomer; these volumes detail the employment of all types of armored warships, from their inception in the 1850s to 1918. This is a significant work. Wilson was, in his time, one of England's leading naval historians and correspondents. The author had many influential friends in the Admiralty and in leadership positions in other major navies, contacts which enriched his work considerably. The only major change in the 1995 edition is the addition of John Roberts' introduction.

The first volume examines the employment of armored warships from their inception to the eve of World War I, while the second volume focuses exclusively on the conduct of the war at sea during the First World War. The only time the subject matter of the two volumes overlaps is in the last chapter of the first volume which discusses various naval accidents and magazine explosions that occurred during the period covered by this edition. Both of these volumes are profusely illustrated with photographs, line drawings, and maps. While the latter are excellent, the drawings are simplistic and the equality of the photographs is disappointing. A minor irritant is the publisher's refusal to change Wilson's unorthodox presentation of ship names; this occasionally creates some confusion whenever ships of neutral nations make an appearance.

Apart from Roberts' brief introduction, no attempt has been made to update the material presented in these volumes. While they do manage to remind us of the state of knowledge available at the time of publication, there is little to show readers where modern opinion and research differ from Wilson's portrait. One example is his account of the sinking of the *Lusitania* in 1915. His inquiry into the factors behind the explosion that wrecked the USS

Maine also lacks detail and is far from satisfactory — but it at least agrees with modern research. Readers will also be struck by the limited detail provided on the evolution and employment of aircraft and aircraft carriers; this, at least, serves to remind us that these weapons played, at best, a minor supporting role in most of the conflicts covered in this work. However, the paucity of information provided on the struggle against the U-boats during World War I is very striking. The reader should note that unlike most naval officers and writers of the period, Wilson was certainly aware of the great potential of these new weapons of the early twentieth century. The few technical insights offered by the author are, for the most part, illustrative of the debates that embroiled naval designers of the period.

The first volume is in many ways the most informative, simply because it examines the multitude of early actions between armored warships that modern accounts tend to skim over or — worse — ignore completely. Wilson's attention in both volumes is clearly riveted on actual military engagements, not the evolution and development of ship types or naval strategy. In accordance, the narrative overlooks some significant peacetime events like the around-the-world cruise of the USN Great White Fleet in 1907–1909. There is little coverage of the domestic forces that helped to formulate Germany's precipitate naval challenge to England. In most cases, Wilson uses his excellent contacts to flesh out the manuscript. Although he was by no means a neutral observer to all the conflicts covered in this work, he still managed to achieve a fair degree of impartiality in the text. As one would rightly suspect, his greatest test of impartiality occurs in the second volume, and one can easily excuse his few momentary lapses of objectivity.

Overall, this is a very informative work which in many ways has withstood the test of time. In some instances, it is still one of the few relatively contemporary English language accounts of the struggles it chronicles. The author's attention to detail and the amount of firsthand information account for its continuing utility. Modern research has been able to quibble

with some of the details, but the overall picture presented by this work has remained essentially intact. About the only major criticism that can be made against the text is that its structure and style will strike many readers as being a trifle archaic. Nonetheless, it will be a very welcome addition to the library of most naval enthusiasts.

PETER K. H. MISPELKAMP

Point Claire, Quebec

EMILY O. GOLDMAN, *Sunken Treaties: Naval Arms Control Between the Wars* (University Park, PA: Pennsylvania State University Press, 1994). 352 pages, bibliography, index. ISBN 0-271-01033-9 cloth. ISBN 0-271-01034-7 paper.

Dr. Goldman has undertaken a commendable task with her book on the Washington Naval Treaty system. What she is trying to show is that the interwar period of 1919–1936 holds valuable information and lessons for post-Cold War attempts to craft arms reduction treaties. This attempt to shift the political scientist's search for significant data back into the dark ages of pre-1945 is a laudable goal. The lack of historical context and knowledge shown by the policy-making elite in North America over the last twenty-five years has created a disturbing trend toward the quick-fix, presentist approach that believes the modern world's problems have (a) never happened like this before, and (b) all have their roots in events which occurred after 1945. Both factors are ludicrously false. Goldman is attempting to change that type of approach to arms control and force reduction negotiations. She must be given due credit for attempting this innovation. However, as for the historical context and analysis that is found in *Sunken Treaties*, the result falls far short of the mark as being a solidly researched, historically comprehensive work that would create much of a stir in the fields of maritime history or international relations.

The biggest problems with this book, from the historian's perspective, are the lack of primary evidence and the dated, questionable

quality of the secondary sources. There is far too much reliance on older secondary works concerning the Washington Treaty system. Many of those works most heavily relied upon are forty or more years old and have now been displaced by newer, more thorough, and comprehensive works. Goldman does not appear, however, to be aware of these more recent studies. Tied to this penchant for an outdated data base is an equally uninspiring desire to find the essence of naval strategy and maritime power in the pages of coffee-table books on naval engineering and technology. These sources only provide the most rudimentary analysis of a most intellectually challenging and complicated process that involves international, service department, and civil-military relations: the formulation of maritime policy and strategy.

The bibliography of the book indicates that archival sources in both the United States and Great Britain have been consulted, but there is no proof of that research being present in the text itself. This lack of archival context, coupled to a reliance on a weak secondary source basis, is undoubtedly the reason why Dr. Goldman makes such elementary mistakes as declaring that the basis of American, British, and Japanese naval strategy in the interwar period was Mahanian. This is a theory that is absolutely incorrect and insupportable, especially in light of the literature that has appeared over the last ten years on such intellectual aspects of pre-World War II British, Japanese, and American naval policy. It appears that, as well as using less than the best material as the historical basis for her theory, Goldman has chosen to rely almost entirely on American scholars for the bulk of her information. This should come as a great surprise to serious historians in the field, especially after the repeated calls by such distinguished scholars as Donald Cameron Watt and John B. Hattendorf for greater appreciation to be paid by American scholars to foreign works. It is clear that Dr. Goldman has not done the research required to make any new statement in terms of the historical debates surrounding the Washington Treaty system. That indeed may not be her purpose here. However, the works she holds up for evaluation by the political science community do not promise to

create a model that will be especially helpful.

Lastly, there is the question of weight given to the early stages of the treaty system, particularly the 1919–1922 period. The book wishes to look at the comprehensive nature of arms control, and where civilian and military authority in this question overlap or conflict. Why, then, is the abortive 1927 Geneva Conference given such short shrift? Surely, this fierce battle between naval and government officials for primacy of place, the resulting short-lived dominance of the naval professionals, their failure to find agreement because of their lack of political context and focus, and the complete discrediting and subjugation of the naval professionals at the 1930 London Naval Conference by civilian authority would have been a useful and logical example for Goldman to use in her quest for a new model. However, she neglects this facet of the treaty system almost entirely. The use of the 1930 and 1935–1936 negotiations and the juxtaposition they presented to the previous discussions in 1921 and 1928 are also poorly utilized.

This lack of insight into the evolutionary and contextual framework of the Washington Treaty system certainly creates some doubt as to just what aspects of this complicated, multinational process Dr. Goldman understands, apart from a dated view of the American position from 1919–1930. Anyone interested in the interwar naval treaty system and its relation to American maritime policy would be well advised to look elsewhere, perhaps to George W. Baer's 1994 book *One Hundred Years of Sea Power*. Those interested in arms control modeling, force reduction theory, lessons of the past, and their applicability to the new world order will certainly find this book useful because of its broader historical context and the integration of international political aspects into the arms control formulae.

GREG KENNEDY

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JERRY E. STRAHAN, *Andrew Jackson Higgins and the Boats that Won the War* (Baton Rouge, LA: Louisiana State University Press, 1994). xvi + 382 pages, illustrations, bibliography. \$29.95.

Clio, the muse of history, is very industrious. Every event in time and every person who has ever lived is recorded. However, it often requires considerable skill to disinter the past adequately because the evidence, while often available enough, is not overly obvious. Moreover, certain individuals, while worthy enough of a study, somehow fail to capture the imagination of scholars. Andrew Jackson Higgins is one such person who hitherto probably has been unjustly neglected. The author of this book has carefully researched his subject and career.

Andrew Jackson Higgins was born in Columbus, Nebraska, in 1886. His early life is a study in the American myth. His mother was a widow, the young boy worked hard, and he had a business organized by the age of twelve. He did not much like school; he was never to be an intellectual. He had a variety of jobs, in all of which he displayed his aggressive business acumen. He moved to Mobile, Alabama, perhaps the most significant decision he made in his life, for his whole career was to be determined by the town's geography. He began with a small timber business which gradually enlarged. It was reasonably successful for about a decade, but owing to a series of bad investments, it was forced into liquidation in 1923. After his business was reconstituted, he turned to the building of small boats. He designed shallow and raft boats for river work, and a few luxury yachts. Once again, he suffered adversity and was forced into liquidation, but with energy and industry he created yet another small boat construction company. It was this new operation, The Boat Services Company, which was to be directly involved in the Second World War.

Through the 1930s, his special boat — called Wonderboat — was in full production. This small vessel was of an innovative design, was highly seaworthy and very maneuverable with a shallow draft, but it could not have been called very attractive to see. Higgins' first major suc-

cess was in 1938; it was to interest the Navy in his landing vessels. By 1940, his business had developed considerably. A year later, Higgins Industries had a contract for fifty tank lighters. His difficulties with the Bureau of Ships seemed to be at an end. Higgins expanded his operation into building landing craft for both personnel and vehicles. He believed, sensibly, that not only was it proper to build a vessel, but to ensure that people knew how to operate it efficiently. He made a contract with the Marines, and their personnel went into training in 1941.

The events of December 1941 changed the situation radically. Higgins was in the process of expanding his operations and planned to open a ship construction site in New Orleans to produce Liberty Ships and similar vessels. This project did not come about, but his landing craft production was augmented. Throughout the war, he was at the forefront of ship construction. He learned a great deal about politics in Washington; his lessons were not always agreeable and were often somewhat rancorous on both sides. His great contribution was in building and designing the landing craft to be used during the Allied invasion of Europe and for the American forces in the Philippines. In 1944, he became very active in politics. He was a great supporter of Harry Truman, retaining this regard for the Vice President when Franklin Roosevelt died and the former took office.

Higgins was lauded by the US Navy, which had not been a promoter of his earlier efforts. He was not, however, equally praised by the labor unions and their membership. He had strikes and required the intervention of the War Labor Board. His difficulties with the workers indicates something that is often forgotten — that labor peace was not universal from 1941 to 1945.

With the war over in the summer of 1945, Higgins now had to change course. The company reorganized its production and the whole process of transition began. It was not an overly happy time. Higgins experienced a number of personal attacks in the press and radio for his business practices and his attitude toward labor. His company was essentially liquidated; Higgins Industries was terminated. Again, a new company was established, new designs for boats

were made, and he planned to produce pleasure craft and some smaller commercial craft such as tugs. There were also plans to build low cost housing.

Higgins made one last major contribution to the national scene. Once more, his firm was involved in naval construction during the Korean War. He was not to have a further role, for he died on 1 August 1952. He was only sixty-five years of age.

This book is an interesting study in entrepreneurial history. It recounts how business life in the United States actually operated, highlighting the successes and failures of Andrew Jackson Higgins. It is not a biography; indeed, very little of the man emerges except for the pugnaciousness of his character and his determination. Perhaps his personal life was relatively uneventful, but it would have been good to have a few more details on his friendships and relationships with national public, military, and naval persons. There is relatively little said about his family. His sister, wife, and children are mentioned in passing but are not given any focus.

This book is written *con amore*; the author obviously admires Andrew Jackson Higgins and is determined to rescue him from undeserved obscurity. His record is impeccable, the illustrations are well selected, and his writing style is impressive. This is not a "light read," but for the professional naval historian or the student of business history, this volume requires close attention.

S. W. JACKMAN

Victoria, British Columbia

MELANIE WIGGINS, *Torpedoes in the Gulf: Galveston and the U-Boats, 1942–1943* (College Station, TX: Texas A & M University Press). x + 255 pages, illustrations, appendix, bibliography, index. \$29.50 cloth, \$14.95 paper.

Naval historians are well aware that during 1942, German U-boats wrought major destruction upon merchant vessels sailing up and down America's east coast in Operation *Paukensschlag*, referred to as "The Happy Time" (*Die Fröhliche Zeit*) by the Third Reich's submariners. This

dramatic story was most recently retold by Michael Gannon in his splendid, award winning *Operation Drumbeat* (1990).

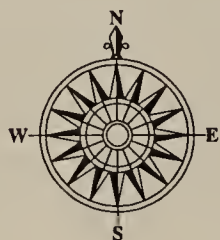
Likewise, it has been faithfully recorded that the U-boats then moved to the Gulf of Mexico, the Caribbean, and the shores of South America to continue their missions of destruction before being recalled to North Atlantic waters. This second campaign against Allied shipping, however, has usually been relegated to subordinate status. Melanie Wiggins of Galveston has now moved to flesh out that gap in our understanding of the crucial U-boat war of 1942–43.

Basing her monograph heavily on local sources, diaries of U-boat commanders preserved in the National Archives, interviews with surviving commanders, and research in the Cuxhaven U-Boot-Archiv, she recreates those times by recounting the cruises of numerous U-boats in Gulf waters. At the same time, she details the reactions of Galvestonians to World War II in general and the submarine menace in particular, although no sinkings took place off Galveston — most occurred off the mouth of the Mississippi. All totaled, seventy ships were attacked in the Gulf. Of these, fifty-six were sunk. Wiggins places particular emphasis on the German use of 720-ton *Milchkühe* (milk cows) in expediting the U-boats' extended cruises in the Gulf.

As a supplement to Gannon's *Operation Drumbeat* or standing alone as a solid piece of research and narration, *Torpedoes in the Gulf* represents a valuable addition to our knowledge of one phase of the Battle of the Atlantic, a contest of naval tactics and technology that played a major role in determining victors and vanquished in World War II. This volume deserves a place in every nautical, military, and academic library collection.

JAMES M. MORRIS

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Shorter Notices

WILLIAM H. GARZKE, JR. AND ROBERT O. DULIN, JR., *Battleships: United States Battleships, 1935–1992* (Annapolis: Naval Institute Press, 1995). x + 386 pages, illustrations, bibliography, appendices, index. ISBN 1-55750-174-2. \$65.00.

The first edition of this book, with Robert Dulin's name listed first, appeared in 1976 with the subtitle *U.S. Battleships in World War II*. The new edition brings the story up to date, providing detailed specifications, line drawings, photographs, and historical data for each vessel. Particularly interesting is a substantial discussion (pp. 222–234) of the turret explosion on board the *Iowa* in 1989. "The likelihood of sabotage has been neither proved nor disproved conclusively," as the authors put it quite correctly (p. 233), but their argument leans toward a combination of overram of powder into the breach, with inadequate training of the crew which allowed it to happen. For those who require comprehensive references of this sort — or who just happen to be fascinated by the quintessential "capital ships" — this book is vital.

FRANCIS E. CUPPAGE, *James Cook and the Conquest of Scurvy* (Westport, CT: Greenwood Press, *Contributions in Medical Studies*, 40, 1994). ix + 163 pages, illustrations, appendices, bibliography, index. ISBN 0-313-2918-0. \$55.00.

Dr. Cuppage is professor of pathology at the University of Kansas Medical Center, but he also has a long-standing interest in medical history. For this book, he reviewed Cook's three circumnavigations with particular attention to provisioning and to the identification, prevention, and cure of scurvy as the title indicates. The result is an interesting, if high priced, mix of Cook's journals, the extensive literature on scurvy, and Cuppage's personal research in the

Pacific. Some of this ground has been covered by others — notably, Kenneth Carpenter in *The History of Scurvy & Vitamin C* (1986) — and some will find Dr. Cuppage's penchant for tables off-putting at times ("Table 7.1: Character Traits of James Cook" (p. 84) for example), but it is unquestionably a contribution to the historical literature on both Cook and scurvy.

STEPHEN FISCHER, ED., *Man and the Maritime Environment* (Exeter: University of Exeter Press, *Exeter Maritime Studies*, 9, 1994). x + 233 pages, illustrations. Paper. ISBN 0-85989-393-6. \$24.95.

The nine papers in this collection have in common some aspect of man's involvement with the sea as an environment — a very general mandate indeed — and the fact that all emanate from the annual Exeter University Dartington maritime history conferences; in this case, those held in 1991 and 1992. Two interesting papers contrast the evolving nineteenth century attitudes of Britain (Margaret Deacon) and the United States (Harry Scheiber) toward oceanography — in the latter case focusing on the Pacific. Stella Turk discusses Cornish coastal biological studies, while Alan Southward and Gerald Boalch treat changing world climate and marine life more generally. Two papers treat tourism and coastal environments — John Travis on Devon and John Channon on Teignmouth. From a rather different approach, Michael Stammers writes of "sailing-ship seafarers and sea creatures," Kim Montin on "the seaman's conception of himself," and Alston Kennerly on "occupational conditioning: first voyage in *Passat*."

KENNETH G. OLIVER, *Under the Southern Cross: A Petty Officer's Chronicle of the USS Octans* (Jefferson, NC: McFarland, 1994). 312 pages, illustrations, appendices, bibliography, index. ISBN 0-89950-999-1. Paper. \$25.95.

Petty Officer Kenneth Oliver spent his World

War II aboard the refrigerated food supply ship USS *Octans* (AF-26), formerly the United Fruit Company's *Ulua*, with a capacity of 55,000 bunches of bananas! The *Octans* did not see much in the way of actual combat, but she made numerous runs through the Pacific with Oliver — a refrigeration expert — aboard as part of the Seventh Fleet Service Force. There are occasional vignettes reminiscent of *Mr. Roberts* (even on a well-run ship, 1,000 cases of beer can be loaded aboard but only 900 reach the hold), but in general, this is a detailed, straightforward account of the workings, human and mechanical, of a supply ship and its crew, based on naval records in addition to the memories of Oliver and some of his crewmates. Available from the publisher (\$28.95 postpaid): Box 611, Jefferson, NC 28640.

RICHARD W. JUDD, EDWIN A. CHURCHILL, AND JOEL W. EASTMAN, EDS., *Maine: The Pine Tree State from Prehistory to the Present* (Orono, ME: University of Maine Press, 1995). xii + 616 pages, illustrations, maps. ISBN 0-89101-081-5, cloth. \$49.95. ISBN 0-89101-082-3, paper. \$30.00.

Twenty-seven Maine scholars collaborate in this volume of twenty-four chapters, each often by several hands, covering the state's history from "Prehistoric Indians" to "Tides of Change, 1967–1988." It hardly needs remark that the sea has been an important aspect of any era of a state with a lengthy coastline. The chapters of this volume, however, are organized primarily on a chronological basis, and only one actually has a hint of salt water in its title, Wayne O'Leary and Lawrence Allin's "Maine Maritime Trades in the Period of Ascendancy." Maritime scholars desiring a general reference volume, however, will find this one valuable. As Richard Judd remarks in his introduction, it is a badly needed successor to Louis Clinton Hatch's *Maine: A History* published in 1919. One disappointment is the complete absence of footnotes throughout, but most chapters do provide useful suggestions for further reading.

MENSUN BOUND, ED., *The Archaeology of Ships at War: Based on Papers Presented at an International Conference Held at Greenwich, London, on 31 October – 1 November 1992* (Oxford: Anthony Nelson (International) Maritime Archaeology Series, I, 1992), 192 pages, 8½" x 11", index, illustrations, photos, plans. Paper. ISBN 0-904614-52-2. £32.00.

The two dozen papers in this collection offer a fascinating cross section of contemporary warship archaeology, all originating as the title indicates at a 1992 conference sponsored by Oxford University MARE, the Nautical Archaeology Society, the National Maritime Museum, and the World Ship Trust. The bulk of the offerings fall under the heading of "excavation and interpretation" and discuss sites in the Mediterranean (three papers), British waters (seven papers, including one each on Henry V's *Grace Dieu* and the *Mary Rose*), and three miscellaneous locations, including a paper by Max Guerout on the CSS *Alabama* (the only paper in French). Three papers fall into the section of "Ordnance" and the remaining eight into that of "Construction, Reconstruction and Preservation." This last category is something of a catch-all, including papers on the construction of an eighteenth century man of war, constraints imposed by the use of timber in construction, the restoration of the HMS *Victory* in the twentieth century, and so on, concluding with two interesting papers which reach out to wider concerns: Colin White on "Too Many Preserved Ships Threaten the Heritage," and Sir Philip Goodhart on "Saving this Century's Ships." This book inaugurates a new series, and while the price is not cheap, the contributors offer much expertise and illustrate their selections well, indicating considerable promise for future volumes promised on "Excavating Ships of War," "The Seaborne Trade in Metals and Ingots," and so on. Further details from Anthony Nelson Ltd., PO Box 9, Oswestry, Shropshire, SY11 1BY, England.

WILLIAM H. MILLER, JR., *Pictorial Encyclopedia of Ocean Liners, 1860–1994* (New York: Dover Publications, 1995). 142 pages, illustrations, 9" x 12". Paper. ISBN 0-486-28137-X. \$16.95.

Beginning with the *Great Eastern* and ending with the most recent cruise ships, William Miller has assembled over 400 black-and-white illustrations of virtually every passenger ship over 15,000 tons built since 1860. Each illustration is provided with a caption noting builder, tonnage, dimensions, speed, passenger capacity, and a line or two with significant historical facts, including final resting place where applicable. Overall, another of Dover's useful maritime reference works.

EDWARD A. MUELLER, *Upper Mississippi River Rafting Steamboats* (Athens, OH: Ohio University Press, 1995). viii + 341 pages, illustrations, maps, appendices, index. ISBN 0-8214-113-6. \$44.95.

In the last half of the nineteenth century, the "rafting" steamboats moved immense rafts of logs and lumber from the Wisconsin, Chippewa, and St. Croix river systems down the Mississippi. In this study, Edward Mueller offers a brief history of this industry, including some participants' memoirs, supplemented by various appendices on river ferries, bridges, etc. The heart of the book, however, is in two parts: a detailed, alphabetical listing of the steamboats (pages 47–90), and some 224 pages of illustrations of the vessels and the life aboard them. Altogether, it is an important reference volume for those interested in steamboats and/or the Mississippi.

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